Volume XX Number 11

DISEASES OF THE NERVOUS SYSTEM

A Practical Journal on Psychiatry and Neurology

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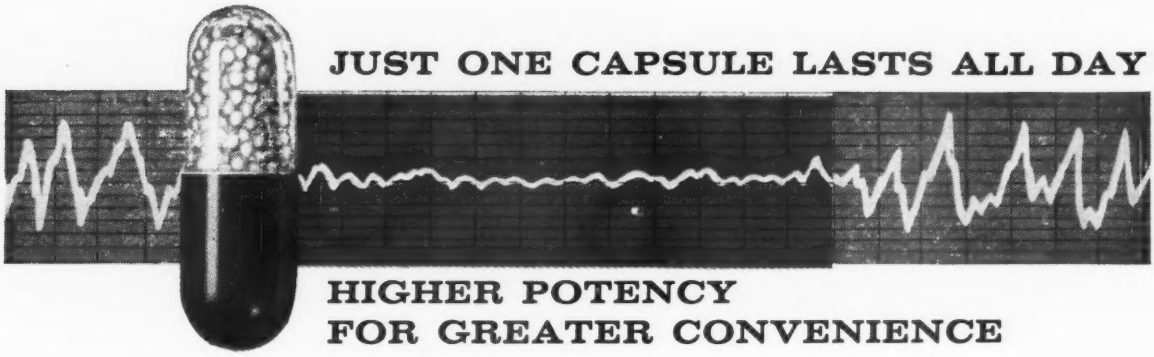

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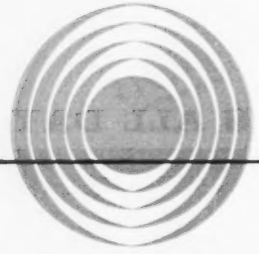

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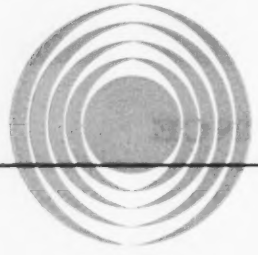

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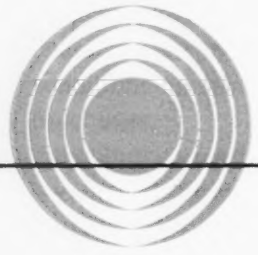

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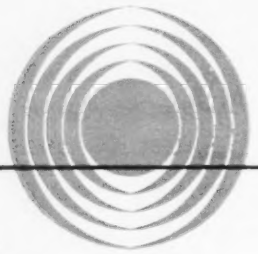

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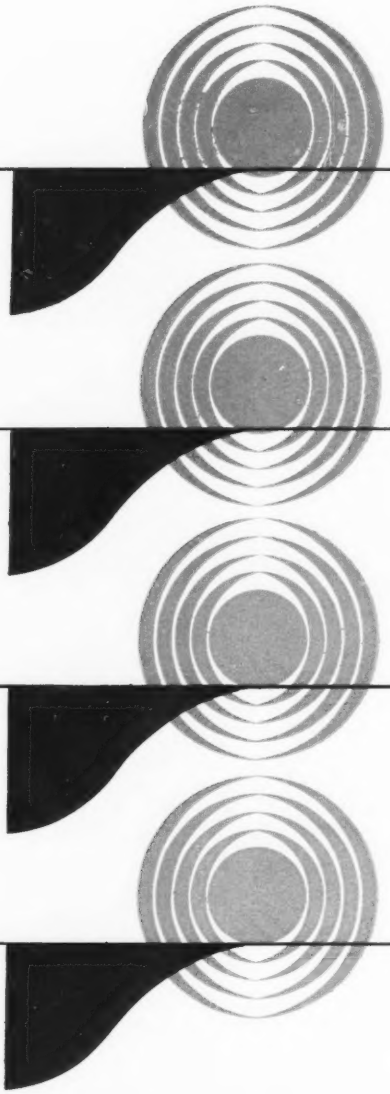

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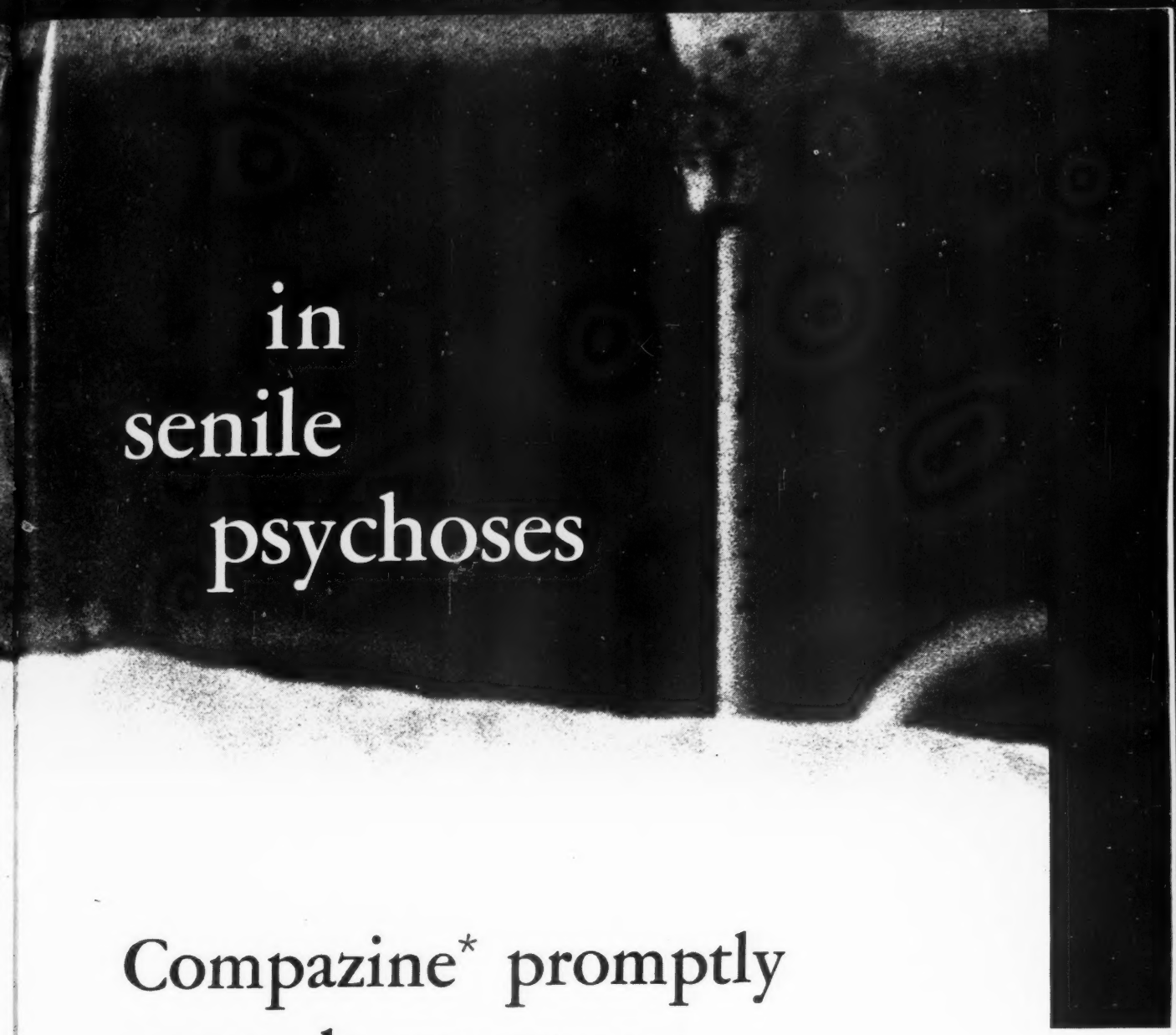

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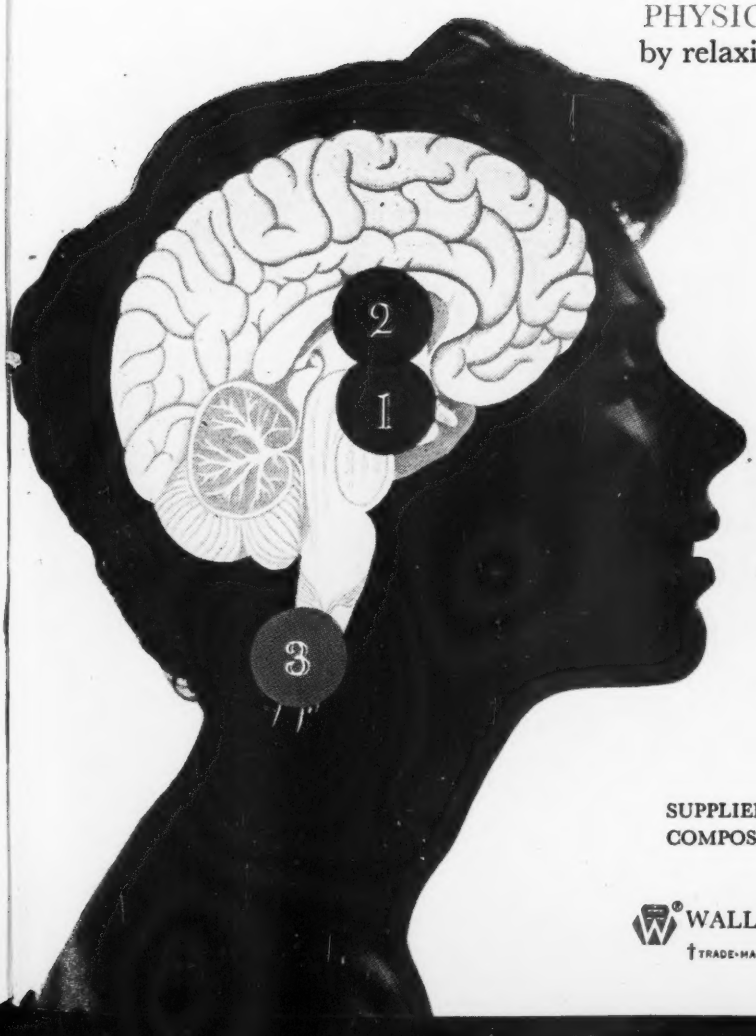

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references: 1. Sainz, A.: The Phrenopraxic Activity of a Non-noxious Antidepressant, *Ann. New York Acad. Sc.* (in press) 1959. 2. Thal, N.: Cumulative Index of Antidepressant Medications, *Dis. Nerv. System 20*:197 (May) 1959. 3. Saunders, J. C.; Roukema, R. W.; Kline, N. S., and Bailey, S. d'A.: Clinical Results with Phenelzine, *Am. J. Psychiat. 116*:71 (July) 1959. 4. Arnow, L. E.: Phenelzine: A Therapeutic Agent for Mental Depression, *Clinical Med., 6*:1573 (Sept.) 1959. 5. Dickel, H. A.; Dixon, H. H.; Shanklin, J. C., and Dixon, H. H., Jr.: Tension Fatigue States and Their Adjunctive Treatment Using Nardil, *Clinical Med., 6*:1579 (Sept.) 1959.

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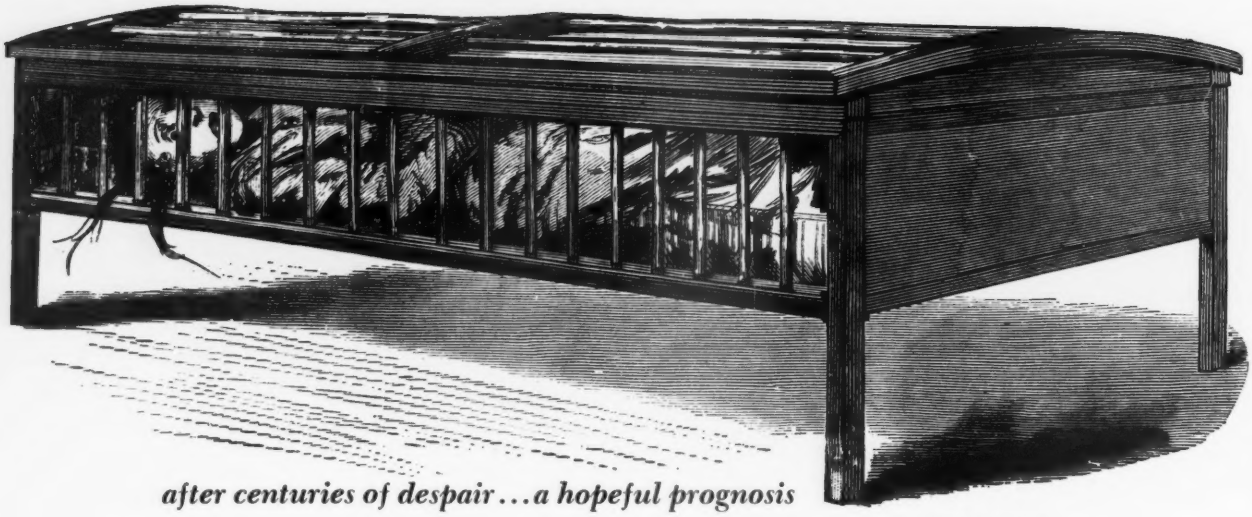

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DISEASES of the Nervous System

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Factors in Manic-Depressive Reactions

JOSEPH B. PARKER, JR., M.D., CHARLES D. SPIELBERGER, PH.D.,
D. K. WALLACE, B.S., and JOSEPH BECKER, PH.D.

This report is based on a study of a group of manic-depressive patients, all of whom met an explicit diagnostic criteria. An effort has been made to evaluate factors which may be related to manic-depressive illness and to the personality structure of the individuals who manifest this illness regardless of race or socio-economic background. During the course of the study, which is continuing, there has been an attempt to evaluate the legitimacy of the limits of the diagnostic criteria. The findings on the manic-depressive patients were contrasted with those in other diagnostic groups when appropriate. We have taken into consideration the hypothesis that there may be a continuum of mental illness and that manic-depressive illness and schizophrenia may be changing facets of the same disorder as proposed by Bellak[1] and interpreted to be the case by others.[2]

Of the manic-depressive reports since Kraepelin's[3] formulation, few in any way indicated their diagnostic criteria in a precise manner, and a number of investigators noted difficulty in diagnostically separating[4] their patients. It is also evident from some of the cases cited in the literature that many of the individuals would be considered schizophrenic by most present day psychiatrists.[5] Indeed, some investigators have stated that some of their cases might be schizophrenic.[6]

Some writers have experienced difficulty in differentiating between manic-depressive patients and psychopaths[4] and have used the term cyclothymic psychopaths for what others would call a manic-depressive reaction.[7]

Although the need for more precise definition of patient-groups in psychiatric research has been expressed for many years, particularly in manic-depressive patients,[8] time has not brought a clearly stated diagnostic criterion except in the genetic studies of Kallman[9] and the family studies of Wilson.[10]

Both psychoanalysts[11-12] and nonanalytically oriented psychiatrists have contended that the manic-depressive reaction differs from psychoneurosis only in a matter of degree and not in kind.[13] Some psychiatrists would seemingly consider all affective reactions as manic-depressive ones.[14] On the other hand, Jacobson,[12] drawing upon her years of psychoanalytic experience with manic-depressive patients has emphasized the diagnostic meaningfulness of Kraepelin's formulation and has noted that manic-depressive patients differ from patients with neurotic depression in both the nature of the illness and the character structure. She also stressed that the recognition of this difference is important for proper therapy.

In order to provide a diagnostically homogeneous patient-group for this study, the diagnostic criteria utilized by Kallmann has been used. Kallmann's criteria for the diagnosis of manic-depressive illness is: "restricted to cyclic cases which have shown periodicity of acute self-limited mood swings before the fifth decade of life and no progressive or residual personality deterioration before or after psychiatric episodes of elation or depression." The criteria also required, as in the Wilson study, that either the depression or the elation had to be sufficiently disabling to require hospital care and treatment. In addition, no patients have been included as having a manic-depressive reaction who possessed more than one of the nine signs found to be pathognomic of

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Presented at annual meeting of The Southern Psychiatric Association, Nashville, Tennessee, October 5-7, 1958.

schizophrenia by Lewis and Piotrowski[15] in a follow-up study of patients previously diagnosed as manic-depressive. Eight patients at one time or another manifested one of these signs. Six of these expressed paranoid-like ideation (sign 9) which appeared to be essentially anger in response to the family's or society's restraint of the manic behavior; these so-called paranoid-like elements disappeared as the patient improved. Two of the eight had a physical complaint of questionable nature (Lewis and Piotrowski sign[1]) during one depressed episode; these symptoms remitted and were not manifest in a subsequent depression.

Method of Study

Sixty-two white male patients who met the above diagnostic criteria and who were admitted during the past five years to the Psychiatric Service of the Durham VA Hospital were studied. All were native born except one, an Anglican native of North Ireland. The remaining subjects were of early American or English, Scotch-Irish, Scotch and German descent except two. One of these two was a Catholic of Italian and Jewish parentage. The other one's family with a Jewish surname had been absorbed into a N. C. Scotch Presbyterian community generations before. In addition, seven Negro male patients who met the diagnostic criteria were studied but are not included in this report except when specified. Data were obtained through psychiatric and medical histories, hospital observations, follow-up interviews during remissions and, in several cases, attempts at psychotherapy. In addition, members of the patients' families and wives of the married patients were interviewed by both psychiatrist and case worker and in many instances involved in case. Data relevant to socio-economic status was obtained on the patient's immediate family and that of his parents. Psychological studies to test various theoretical hypotheses or concepts were also done in either the period of illness, the remission, or both, as deemed appropriate for the particular study. These will be reported in detail separately.

Two patient-groups have been used as controls for comparison on many of the factors evaluated. One was a group of 100 white male schizophrenics whose illness was characterized by elements of a thought disorder and some disturbance of affect. The other was a group of 100 white males with a psychoneurotic depressive reaction who were depressed in mood with biological concomitants of the depression but who did not meet the Kallman criteria and who were negative for the Lewis-Piotrowski signs. All of the control patients were admitted to the Durham VA Hospital during the same period of time as the manic-depressive patients. Normal subjects have been used as controls for a number of the psychological measurements as noted below. Both statements and findings from the literature concerning manic-depressive illness and patients' personality or character structure and questions raised by our experience are being investigated.

Factors reported on at this time are (1) family incidence of mental illness, (2) socio-economic background, (3) religion, (4) the dominant parent, (5) education, (6) nature of achievement striving, (7) social conformity, (8) precipitating events, (9) psychosomatic illness, (10) excessive use of alcohol, and (11) suicidal tendencies.

Findings

Family Incidence of Mental Illness:

Both the genetic[9] and psychological influence[10,16] of the family in manic-depressive reactions have been emphasized. In the present study, 24 of the 62 manic-depressive subjects had parents or siblings who had illnesses that met the above diagnostic criteria used in this study, and in most instances were so diagnosed elsewhere. In addition, two other manic-depressive subjects had siblings with illnesses which had been called paranoid but who displayed a periodicity of pathological mood alteration and recovered without defect. Including these two cases, a total of 41.8% of the manic-depressive patients had parents or siblings with a manic-depressive illness in the study group (Table I). The general population rate for manic-depressive reactions has been given as generally not exceeding 0.4%.[9]

Of patients' parents 22% had had a manic-depressive illness as compared to 23.4% of the parents of Kallman's index cases.[9] Only

TABLE I

Mental Illness in Immediate Family

Patient Group	No.	No. with M. Depr. Prns. or Sibs.	Other Ment. Ill. Prns. or Sibs.	% M. Depr.	% Maj. Ment. Ill.
Manic D.	62	26	1 (?)	41.8	43.5
Psychon. Depr.	100	2	14	2.0	16.0

one of the 62 had a near relative that might have been diagnosed as schizophrenic. Three of the seven Negroes (42.9%) had relatives who had also had a manic-depressive illness.

Although the 100 psychoneurotic depressives had numerous "nervous" relatives, a diagnosible major mental disorder had occurred in only 16 or 16% of the members of their immediate families. Only two of the 16 psychoneurotics had immediate relatives who could have been diagnosed as having a manic-depressive illness by the criteria used in this study.

Socio-economic Status:

It has generally been noted that manic-depressive patients come from the upper socio-economic group.[17,18,19] Relative socio-economic status was determined for the manic-depressive patients primarily from data covering the patients' parents' occupation, education, property, religion and personal interests. Similar data was also obtained for the patients. Thirty-two or 51.6% of the patients were from what approximately corresponds to middle and upper middle class families. Twenty or 32.2% were from what corresponds to lower middle class families and 10 or 16.1% were of a very low socio-economic origin. A manic-depressive illness had occurred in a parent or sibling in 40% of the lower socio-economic group and in 40.6% of the middle and upper middle group and in 45% of the lower middle group.

Religious Background:

Religious distribution of the white church population of North Carolina, the religious origins of the total manic-depressive group, the 100 psychoneurotic depressive patients, 87 schizophrenic and 200 nonpsychiatric general medical and surgical (G.M.S.) VA Hospital patients are presented in Table II. Except for the manic-depressives, the distribution of religious origins of the other groups were very similar to the population norms. The percentage of manic-depressives from three less prevalent religious groups were noticeably greater than would be expected on the basis of state-wide religious norms. Conversely the percentages of manic-depressives from the largest denomination, Baptist, was less than half the state representation.

Nature of Achievement Striving:

Cohen *et al.* have emphasized early parental demands on the pre-manic-depressive patients for rigidly conforming behavior and high achievement, particularly with regard to raising or maintaining the prestige of the family. A study[20] by one of our group has shown that remitted manic-depressive patients scored significantly higher than matched normal controls on a "value achievement" test.[21] High scores on this scale developed by DeCharms, McClelland and their co-workers[22] have been interpreted as indicative of personalities who place much verbal emphasis on achievement but who do not actively strive to achieve. The manic-depressive patients who scored high on value achievement also scored higher on the California Fascism Scale (F Scale)[23] which assesses underlying authoritarian ideology, and on the Traditional Family Ideology Scale (TFI)[24] which relates more specifically to authoritarian ideology within the family. The results so far appear to be holding for the lower socio-economic group and the Ne-

TABLE II

Religious Distribution

	% N.C. Relig. Pop. 1955	% M.D. Pts.	GMS Pts.	% Psychon. Dep. Pts.	% Schiz. Patients
Baptist	48.5	20.9	54.9	58.0	48.2
Methodist	23.9	30.2	21.5	17.7	22.9
Presbyterian	7.5	20.9	7.5	6.0	9.1
Lutheran	3.8	1.6	4.0	2.0	1.1
Disciples of Christ	3.1	—	4.0	4.0	5.7
Episcopalean	1.9	8.1	1.5	2.0	3.4
Roman Catholic	1.6	6.4	3.5	2.0	4.5
Holiness Sects	1.3	—	2.5	7.0	3.4
Evang. and Reform.	0.9	1.6	0.5	—	1.1
Others or None	7.5	9.0	1.0	2.0	—

gro manic-depressives, as well as the middle class groups. Preliminary findings of our further study of achievement and conformity of manic-depressive patients as compared to other diagnostic groups suggest that psychoneurotic depressives and socially remitted schizophrenics are not as strong in value achievement or as strongly authoritarian in attitude and traditional ideology as the manic-depressive group.

Education:

The total manic-depressive group had an average of 12.3 years of school, the psychoneurotic group 9.5 years, and the schizophrenic group 10.3 years. It is especially interesting that the 10 lower class manic-depressives had an average of 10.9 years of school with five completing high school, four of the five taking further schooling, and two graduating from college. Thus, the manic-depressive group, regardless of background, were better educated than other psychiatric groups and were substantially above the state-wide average of 7.9 years for whites (1950 census), or the general hospital patients which educationally approximated the state-wide level for their age groups.

Social Conformity:

The pattern of conformity of manic-depressive individuals and their families has been stressed as has the compulsive nature of the manic-depressive personalities during remission.[13] In the present study, we noted as nonconforming those patients who evidenced anti-social difficulties such as excessive drinking, fighting or sexual promiscuity when not clearly hypomanic and often with resulting adverse publicity. Table III-A shows the conforming and nonconforming behavior of the manic-depressive patients in the lower socio-economic group with their educational level, occurrence of family mental illness, religion and dominant parent. Table III-B shows those patients from the middle socio-economic groups who were nonconforming in their social behavior. Eighteen or 29% of the total 62 were or had been socially nonconforming. Education or a particular Protestant religion was apparently of little influence in nonconforming behavior; however, the occurrence of a manic-depressive illness in another member or members of the family tended to be higher (55.5%) for the socially nonconformers than for the remainder of the group (31.8%).

Precipitating Events:

The question of psychogenic precipitating events[25] is often confused by diagnostic variation and failure to separate or distinguish conflictual precipitating situations from

TABLE III A

Conforming and Nonconforming Manic-Depressives of Lower Socio-Economic Group

Pt. No.	Parental Dominance	C.	N.C.	N.C.T.	Ed. Level	Maj. Ment. Ill. in Fam.	Relig.
24568	M	+			6+		Bapt.
34364	F	+			8		Bapt.
U 18889	M			+	14		Bapt.
24261	M			+	12	+	Meth.
16663	F	+			12+		Meth.
25929	M			+	16	+	R. Cath.
16381	M		+		8+	+	Bapt.
32702	E			+	11+		R. Cath.
9484	E		+		6		None
25481	E		+		16	+	Agnost.

C. = Conforming.
N.C. = Nonconforming.
N.C.T. = Formerly nonconforming, now conforming or in transition.
E. = Equal or indeterminable.

TABLE III B

Nonconforming Manic-Depressive Patients in Middle Socio-Economic Groups

Pt. No.	Parental Dominance	N.C.	N.C.T.	Ed. Level	Maj. Ment. Ill. in Fam.	Relig.
4857	F	+		6*	+	Bapt.
6071	M		+	12	+	Episc.
5143	M		+	16		R. Cath.
3079	F	+		10		Non. Denom.
36830	M	+		13+		Meth.
32015	F		+	12	+	Episc.
29340	M	+		12+	+	Meth.
34710	F		+	12	+	Meth.
35898	E	+		8		Presby.
39897	M		+	17	+	Bapt.
36975	M	+		11		Presby.

N.C. = Nonconforming.
N.C.T. = Formerly nonconforming, now conforming or in transition.
E. = Equal or indeterminable.
* = Reading defect.

symptoms or sequelae of the illness itself as well as the frequent unreliability of such data. Figure 1 shows (1) the percentage of manic-depressive patients who seemingly had external events precipitating their illness, exclusively, (2) those who had an intra-physic emotional experience exclusively, as the precipitant for the episodes, (3) those who had no precipitating events for any of their episodes, and (4) those who had a precipitating experience (external or intra-psychic) one or more times but no precipitating experiences for their other episodes.

The external situations were predominantly of the nature of the loss of a love object or status in general with physical injury or infection occurring less frequently. The term intra-psychic emotional experience is used to cover the situation described by Cohen *et al.* when the "change which has actually occurred has been the patient's appraisal of the situation" and which they related to the manic-depressive patient's incessant hopes for a dependent relationship where all his needs are met. Examples of such experiences of appraisal are the following statements which were related by patients: "feel I have failed to do what I was capable of doing" from a man who was one of 10 children of a poor white sharecropper, and who had actually accomplished much for himself, but whose history certainly revealed he had not succeeded in having his emotional needs met; and as stated by another patient from a higher social group, "One day you look off down the road and see what is, *for others* and what might have been and what is, *for your self,* and get to thinking—then you begin to get blue—." Such statements certainly indicate the individual's striving tendencies and desire to "do something or be something worthwhile," or to be praised by someone. Although such patients met the criteria for an intra-psychic emotional experience, at no time did we feel we could definitely state that the individual was not already depressed when he had such experiences. In other words, it was not possible to determine whether the appraisal of the situation precipitated the depression or whether a depressed mood evoked a reappraisal of the situation.

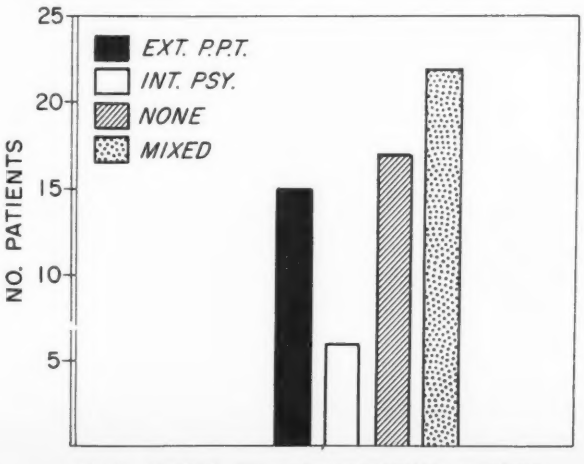

Fig 1, TYPES OF PRECIPITATING EVENTS

Dominant Parent:

The influence of one parent, usually the mother, on the later life of the individual has been of increasing interest in studies of psychiatric patients.[16-26] Our criteria for parental dominance was the patient's evaluation plus separate confirmation from siblings or wives. This information frequently was given spontaneously without inquiry. In several cases, interviews with the parents themselves provided further confirmation. Thirty-three or 53.2% had dominant mothers who were seen by the patient and his relatives as demanding or expectant of high performance; 18 or 29.1% had a dominant father. Equal or indeterminable dominance existed in 11 or 17.7%. These percentages did not appear to be influenced by socio-economic factors. As previously noted by Kohn and Clausen, we also observed that even though the mother may have been dominant, few of the non-dominant fathers were actually weak or ineffectual. When the father was dominant, he was usually strongly so.

Alcohol:

A relatively high incidence of alcoholism in manic-depressive patients, was recently reported by Cassidy *et al.*;[14] 20 of the 62 manic-depressives had at one time used alcohol excessively. For eight of these patients, excessive alcohol was definitely subsequent to and seemingly the result of a pathological change in mood. The excessive use of alcohol by these eight came as a consequence of a series of complicating events propelled by the patient's unsuccessful attempts to deal with his change in mood. The

TABLE IV

Psychosomatic Conditions 62 Manic-Depressive Patients

Disease	No.	% of 62
Diabetes	2	3.2
Diarrhea	2	3.2
G.U.	1	1.6
Hypertension	2	3.2
Hyperthyroidism	1	1.6
Obesity	6	9.6
Peptic Ulcer	10	16.1
Polycythemia	1	1.6
Rheumatoid Arthritis	1	1.6
Skin Conditions	3	4.8
TBC	1	1.6

excessive use of alcohol by these eight came as a consequence of a series of complicating events propelled by the patient's unsuccessful attempts to deal with his change in mood. Twenty of the 100 psychoneurotic and 21 of the 100 schizophrenic subjects had excessive alcoholic consumption.

Psychosomatic Illness:

Studies of the relationship of major emotional disorders to physical disease have produced contradictory findings.[9,10,27,28] The illnesses generally considered to have psychic components that were present in our manic-depressive group are presented in Table IV where it may be noted that 14.5% have evidence of a medically and roentgenographically diagnosed peptic ulcer. This contrasts to the lifetime expectancy of peptic ulcer of 5% to 10% in the general population.[29] We have no adequate explanation for the fact that our series differed from findings reported by others[9,10,27,28] of a low incidence of peptic ulcer or a high incidence of diabetes, hypertension and other disorders in manic-depressive patients. However, it should be noted that the peak initial occurrence of peptic ulcer is in the third and fourth decades of life corresponding to the peak occurrence of manic-depressive illness in the general population and also for our series. The mean age of the initial episode of manic-depressive illness in our patients was slightly over 28 years. In contrast to Ross' findings that ulcer developed usually in the hypomanic phase, in the present study some ulcers occurred when the patients were mildly hypomanic and in others when they were becoming depressed.

Suicidal Tendencies:

Suicidal intentions as indicated by attempts or actual plans and preparations occurred in 16 or 25.8% of the manic-depressive cases as compared to 19 or 19% of the psychoneurotic depressives. Three of the seven Negroes were similarly suicidal. Forty-five or 72.5% of the manic-depressive group and 30 or 30% of the psychoneurotic group had had active suicidal thoughts or ruminations (significantly more suicidal).

Summary and Discussion

Findings on 62 white male manic-depressive patients, all meeting the same diagnostic criteria have been reviewed. In general, the restrictions imposed by the diagnostic criteria seemed to be justified. If, however, the few patients who met the criteria except for onset after the fifth decade had been included, there would have been no essential difference in the factors studied. The number of these patients was too small to justify any changes in diagnostic criteria at this time.

The high incidence of manic-depressive reaction in the families of the 62 cases would have been considerably greater if we had included grandparents, aunts and uncles, which lends support to Kallmann's contention that schizophrenia is not likely to occur in relatives of a manic-depressive diagnosed according to his criteria. This would cast doubt on a continuum theory that manic-depressive patients may under various conditions deteriorate into schizophrenic ones.

The religious difference between the manic-depressive and the other group seemed to us to be explained only in part by class differences. One should not, however, conclude that a particular denomination predisposes one to a particular type of mental illness; rather, one's religious origin may only indicate and be one facet of a family's traditional approach to conformity as well as the level where a family likes to conceive of itself in the community's society.

Social conformity in our group tended to be influenced by social class, an observation previously made by others.[30] Although some of the nonconformers could have been called

psychopaths in their remitted state, they met our diagnostic criteria. Except for the higher incidence of a manic-depressive illness in their families, the nonconforming group did not differ from the rest of the 62 subjects. As was seen in Tables III-A and III-B, these people tend to become more conforming with time and age.

In our studies to date, "value achievement" and the need to accept authoritarian attitudes seem to cut across socio-economic and race differences for manic depressive patients. Further exploration of the individual's socialization process and the family ideology appear, along with the studies of genetic factors, to be the most promising approaches to the understanding of manic-depressive illness and the character structure of the person who has this illness.

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The Discharged Mental Hospital Chlorpromazine Patient

(Third of a Series—A Three Year Study)

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This paper is a continuation of two previous papers,[1,2] allowing a three year survey from February 1955 to February 1958.

With the introduction of chlorpromazine, many investigators mitigated the initial enthusiasm with conscientious warnings that it was not a "cure all" for mental illness and that its final value could only be assessed by a continuity of survey over the years. Since then a number of drugs chemicaly related and unrelated to chlorpromazine have appeared, claiming equal or superior qualities, creating an *embarras de richesse,* leaving the clinician puzzled, but stimulated for new trials. Chlorpromazine has the advantage that it has been and continues to be fully investigated, thus becoming a reliable tool in the hands of the physician. It is interesting to note what it has done to a specific type of patient in a specific hospital setting after a specific period of three years.

Method and Type of Patients Treated

As in previous papers,[1,2] patients were selected by symptomatology rather than diagnoses. A psychiatric diagnosis presently remains vague and subject to dispute. Rather than marking our patients with such terms as "chronic schizophrenics," we preferred three years ago to select those female patients who prior to treatment were denudative, incontinent, combative, destructive and noisy. Patients void of such symptoms did not qualify for this study. Medication was given parenterally and orally, the latter in the form of tablets, sustained release spansule capsules and liquid concentrate. Progress was reported daily in code. The overwhelming majority of the patients treated had had electro or insulin shock therapy at one time or other during their hospitalization. Improvement, if any, was not maintained.

In this report emphasis is placed on patients who during this three year period had attained social recovery, had been discharged and had remained discharged, and on those who had returned. Finally a group of the discharged patients was placed on placebos, as a control measure.

Inpatients

TABLE I

General Information

February 23rd of Each Year

	AFTER		
	1 year	2 years	3 years
Patients treated	348	517	736
Expired due to reasons not connected with drug therapy	4	7	23
Patients conditionally discharged, followed by systematic treatment with chlorpromazine	79	161	220
Returns	10 (12.6%)	23 (14.2%)	45 (20.4%)
Remaining out of institution	68	138	175

TABLE II

	Yearly Average 1955-1957
Female patients conditionally discharged, minus patients reported in Table I	442
Female patients returned from conditional discharge, not systematically treated with chlorpromazine after discharge	181 (40.9%)
Total conditional discharges, male and female, minus patients reported in Table I	935
Total returns from conditional discharge, male and female, not systematically treated with chlorpromazine after discharge	356 (37.1%)

The variance in the return rate between Table I and II is apparent. Only conditional discharges and returns were used for statistical evaluation. A conditional discharge in Illinois denotes that the patient remains under out-patient clinic supervision for one year, after which, if outside adjustment remains satisfactory, the patient is permanently discharged by court order. During this year, many patients return to the hospi-

From Elgin State Hospital, Elgin, Illinois.

Read at the 114th Annual Meeting of the American Psychiatric Association, May 1958, San Francisco, California.

tal (Fig. 2). Yet the return rate (20.4%) of patients on this project who received systematic treatment with chlorpromazine after discharge is considerably lower than the untreated female patients (40.9%). Likewise, the total return rate from conditional discharge (male and female patients), namely 37.1%, lies considerably above 20.4%. To determine the statistical significance of these figures, a Chi-Square Test was carried out. The value obtained in this test, comparing both the treated and untreated groups, yields a probability of .001. This indicates that a difference such as this could be expected to happen by chance only once in a thousand.

TABLE III

Age and Hospitalization

Under 20 years of age	12
21-30	95
31-40	184
41-50	239
51-60	117
61-70	68
71-80	21
Total	736

Less than one year hospitalization	41
1-5	207
6-10	168
11-15	144
16-20	83
21-25	65
26-30	14
31-35	13
35-40	1
Total	736

The greater part of the 736 patients treated was 41 to 50 years old and the length of hospitalization indicates definite chronicity of illness. Of these 70% improved to a degree that "target symptoms," such as described above, disappeared and 220 patients improved sufficiently to be discharged.

Dosage, Duration, Side Effects

Dosages on in-patients ranged from 100 to 1200 mg. a day orally, or 50 to 150 mg. intramuscularly. Daily dosages on out-patients varied from 50 to 800 mg. orally. In earlier days[1] we considered a patient who did not improve after 90 days' treatment as refractory, but we have now extended this period to one year, since improvement on the drug has been observed after this period.

While chlorpromazine continues to cause side effects, with passing years we have become more alerted to minimal signs of tremor, shuffling gait, drooling, skin eruptions, or incipient jaundice. Immediate discontinuance or decrease of medication has prevented development of full blown complications. It is our experience also that by not allowing the blood pressure to drop below 90/60, parkinsonism may be avoided. Unsightly weight gains still occur. No blood dyscrasias have been discovered during the three years of this study. One case of lactation is presently being observed. It occurred nine months after beginning of treatment in a 29 year old female. She had a hysterectomy five months before.

Patients Out of Institution

TABLE IV

Age and Hospitalization

Age in Years	No.
Less than 20	2
21-30	40
31-40	53
41-50	58
51-60	14
61-70	8
Total	175

Hospitalization (yrs.)	No.
Less than one	20
1-5	71
6-10	54
11-16	24
16-20	6
Total	175

A breakdown of patients' age and length of hospitalization again indicates definite chronicity of illness. Yet, 95 of the 175 patients discharged were under 41 years of age, compared with the balance of 80 who were older. Likewise, 91 patients had hospitalization for less than six years, compared with the balance of 84, who had been in the hospital from six to 20 years.

As patients began to leave the hospital three years ago, it became mandatory to supply them with the drug after discharge. Previous experience[3] had indicated that they could not be discontinued abruptly. Rather than issue prescriptions, it was decided to dispense the drug. Patients are frequently unwilling or unable to purchase it. Thus the special drug clinic at Elgin State Hospital came into existence. Its mode of operation

has been described previously.[1] The drug clinic is now in its fourth year. Its cost of operation is quite reasonable.[4]

Side effects in out-patients have been extremely rare. Occasional drowsiness and mild parkinsonism are easily remedied by decreasing dosage. The latter ranges from 50 to 800 mg. a day. The practice of doing routine blood counts during clinic visits was given up during the second year. This method is considered inadequate regarding the preventive detection of agranulocytosis and we have not seen this complication at the clinic. We do, however, insist on a thorough physical examination, searching for ulcerations, etc., during each visit, in order to detect this dreaded complication, should it occur. (So far there has been only one case of agranulocytosis due to chlorpromazine in our inpatient population. Over 4000 patients have been given chlorpromazine.[5])

Seventeen outpatients during the last year were placed on sustained release spansule capsules, containing 200 mg. of the drug taken after breakfast. With the exception of two, patients prefer these. The two complained that they no longer "feel the impact when the drug hits them," and preferred to use the tablets. The spansule capsule is popular with employed patients.

Of the total 175 patients out of the institution 18 have never appeared at the clinic or have not been heard of for more than one year. To our knowledge, they have not returned to other institutions. These "drop outs" represent approximately 10%, indicating that clinic attendance remains about 90%. This is significant, since the vast majority of the patients live within a radius of 45 miles from Elgin, and willingly undertake the 90 mile round trip to the clinic at three week intervals.

The 48 gainfully employed patients work as salesladies, comptometer operators, typists, maids, laundry workers, or in other sundry occupations.

TABLE V

Activities of Patients Not Returning

	2-23-56	2-23-37	2-23-58
Gainfully employed	18	41	48
Keeping house independently	27	45	52
Keeping house under supervision	18	44	43
Idle at home	5	6	8
Returned to other mental hospitals		2	5
Unknown			18
Transferred to private sanitarium			1
Total	68	138	175

TABLE VI

Time Away from Institution—February 23 1958

31 months	6
24-30	49
18-23	36
12-17	37
6-11	34
1- 5	13
Total	175

Six patients have been away from the institution for 31 months and 49 for more than two years, 73 for more than one year, and 47 for less than one year.

Returned Patients (Now in Institution)

TABLE VII

Reasons for Return

Relapsed on drugs	18
Irregular clinic attendance	13
Uncooperative in taking drugs	6
Family unable or unwilling to keep patient	4
Placebo relapse	3
Patient wanted to return	1
Total	45

A mere 18, or 8.2% of the 220 patients discharged, relapsed while taking the drugs as prescribed, as far as could be established from family and patient. Placebo relapses are listed in Table XI.

TABLE VIII

Length of Absence from Institution of Returned Patients (45)

Months	No.
31	1
24-30	2
18-23	5
12-17	3
6-11	14
1- 5	15
Less than one month	5
Total	45

When relapse or return occurs, it happens relatively early after discharge. Thus, 34 patients returned during the first year, compared with the balance of 11 who returned after having been away for more than 12

months. It indicates the precarious nature of the social recovery in a patient of this type. Adjustment difficulties seem to be greatest during the first year.

During the three year study 20 patients returned for various reasons, but were discharged again after re-entering social recovery on chlorpromazine.

Dischargeable Patients

TABLE IX

Reasons for Delay of Discharge

Family unwilling or unable to accept patient due to lack of funds, room, or personal reasons	46
Family deliberating	9
No family or home available. (Not well enough for wage placement)	10
Patient refuses to leave	9
Family inadequate to care for patient	1
Awaiting wage placement	3
Awaiting immediate discharge	24
Total	102

With the exception of nine patients who refuse to leave the institution for fear of extramural realties, 93 patients find themselves detained for the reasons listed, although clinical improvement would permit their separation from the institution. Whenever such obstacles are encountered, the possibility of a wage placement is considered by the ward physician (R.S.). Only a minority, however, is clinically eligible for such placement, for here the patient needs to adjust to entirely new surroundings and sometimes new work.

Deaths

TABLE X

Age of Deceased Patients

Average age of expired patients	52 yrs. 2 mos.
Age of youngest expired patient	21 yrs.
Age of oldest expired patient	69 yrs. 7 mos.

A number of deaths is to be expected in a project dealing with 736 patients, whose average age is around 40 years. The average age of the 23 deceased patients was 52 years, two months. No fatality was connected with the intake of the drug.

Placebo Patients

During the second year of the study the question came up as to how long patients should remain on the drug after discharge.[2] For this purpose 33 patients had been placed on placebos during the second year of the study. During the third year this number had increased to 57. The placebo pill had the same appearance as the 100 mg. chlorpromazine tablet. Many a patient left the institution still taking 600 mg. of chlorpromazine a day. As time went by, a considerable number of patients were gradually reduced to 100 or 200 mg. a day, respectively. Patients for the placebo study were selected from the latter group. They appeared to have "consolidated" their social recovery on these dosages, had secured employment or kept house independently. An average of 10 months had passed since their discharge.

Of these 57 patients 32 (56.1%) relapsed.

TABLE XI

Placebo Group (57 Patients)

Relapsed	32 patients (56.1%)
Longest period social recovery maintained on placebos	1 year 2 months
Shortest period of social recovery maintained on placebos	20 days
Average length of illness (In terms of hospitalization length plus time away from institution after discharge)	7 years 11 months
Longest duration of illness	28 years
Shortest duration of illness	2 years 4 months
Returned to institution (Two were discharged again)	5
Did not relapse	25 patients (43.9%)
Longest period social recovery maintained as of February 23, 1958	1 year 4 months
Shortest period social recovery maintained as of February 23, 1958	2 months
Average length of illness (In terms of hospitalization length plus time away from institution after discharge)	6 years 4 months
Longest duration of illness	20 years
Shortest duration of illness	1 year 1 month

A patient who did not maintain social recovery by showing either one or all of the symptoms germane to her pretreatment clinical picture was considered in relapse. Five of these 32 patients relapsed to a degree that rehospitalization became necessary. Two of these five entered social recovery again after returning to the drug. They were again discharged. The remaining three are presently in the institution, receiving drug treatment. The other 27 placebo relapses improved sufficiently within a few days after resuming the drug, without rehospitalization.

Twenty-five (43.9%) patients did not relapse. It is interesting to note that length of illness in terms of hospitalization length plus time away from institution after discharge is almost identical in the average (7 years, 11 months, and 6 years, 4 months, respectively) in both groups, the relapsed and the non-relapsed. One would expect perhaps the non-relapsed group to show a shorter length of illness than the relapsed group. This is not the case in our study.

Comments

It remains our policy, once a patient has attained social recovery in the institution, not to transfer her to a so-called better ward. The patient might feel rejected by the very ward personnel with whom she accomplished her improvement, were she now to be separated from them. They might feel rejected by the patients and employees of the "better ward," who are apt to look down on her regarding her institutional background. We felt that the family would be the most appreciative group the patient could join. Thus we have been discharging patients directly from the cottage where they once had led a regressed existence.

Fifteen per cent of all patients began treatment with parenteral medication, later changing to oral medication as cooperation improved. This figure has been the same throughout the three years. The study took place on two cottages, housing 231 and 245 patients, respectively. It was felt that if a patient did not improve after one year of treatment, she may be tentatively or temporarily considered as refractory to treatment. Thus there has been slow movement of population on these cottages.

Discussion

Freyhan[8] quotes Bleuler as avoiding the word "results" when dealing with his patients. He preferred the term "outcome." Such semantic refinements are indicated in reporting the action of a drug which remains under investigation. Hence the title of this paper omitting the word "results."

"Social recovery," according to Freyhan,[8] corresponds to those patients Bleuler classified as "mildly deteriorated," "capable of earning a living." Zilboorg, likewise as quoted by Freyhan, doubted that "social recovery alone is a guarantee against the recurrence or against a gradual continuation and further development of the schizophrenic process," since the socially recovered patients, "with very rare exceptions, fail to establish a complete affective contact with reality." This latter observation is being readily confirmed during the clinic visits of our discharged patients. Further, the rate of returns and the multiple discharges[7] indicate the lability and fluctuating quality of what has come to be called social recovery.

Bleuler is further quoted as stating[8] that figures relating to a mental illness do not relate to the mental illness as such, but to specific mental patients treated at a specific hospital. In this study, specific elements enter the picture which warrant mention.

1. Patients were specifically chosen by their symptomatology of incontinence, denudativeness, destructiveness, combativeness and noisiness.

2. Discharge policies vary from institution to institution. Ours is liberal. They are dependent on many factors germane to the administration of the particular hospital. Likewise, reasons for the delay of discharges (Table IX) illustrate that a drug must not be evaluated alone by the discharge rate of a given number of patients from a given hospital.

3. Specific to our treatment setting was the opening of a special occupational and recreational therapy unit at the cottages where these patients were being treated, introducing an additional therapeutic factor.

4. The cottages on which the patients under treatment resided had been noisy and unclean, furniture had been destroyed frequently, drains had been clogged and win-

dows broken. Clinical improvement of these destructive patients made itself soon felt in the diminished cost of repairs.[4] Together with the physical improvement of the ward appearance there was over-all improvement of personnel morale. From this the patient benefited.

5. Other services such as the Volunteers' Corps and the chaplains, became stimulated and interested in working with this type of disturbed patient who improved. Again the patients benefited from this influx of new therapeutic personnel.

6. Public health standards improved when patients became able to voice complaints about physical illness.

7. Freedom of the grounds has been granted to an increasing number of patients, and home visits have become popular.

All these measures introduced additional therapeutic factors in this specific treatment setting. The fact, however, remains that these additional factors would hardly have emerged without the initial impact of patient and drug. The cottages mentioned would discharge from two to three patients a year before the introduction of chlorpromazine, compared with the figures in Table I.

8. Finally, then, the drug clinic operating on premises further contribute to the specific setting. The placebo relapses have shown the paramount importance of vigilantly supervised, continued drug treatment after discharge. 56.1% placebo relapses are high, occurring in patients whose social recovery had been considered stable.

Summary

1. A three year continued survey of once nude, incontinent, combative, destructive and noisy female patients with average hospitalization of eight to ten years were treated with chlorpromazine.

2. Of 736 patients treated, 220 were discharged, 45 returned. The return rate (20.4%) of patients on this study who received continued drug treatment after discharge is considerably below that of the over-all return rate (37.1%).

3. Of the 175 remaining outside the institution 48 have found gainful employment as salesladies, comptometer operators, typists, maids, laundry workers, etc.

4. A special drug clinic functions on premises, dispenses drugs to discharged patients and supervises their course of rehabilitation. This has contributed to keeping 175 patients out of the institution. Placebo controls on discharged patients have shown 56.1% relapses, indicating that continued drug therapy after discharge is essential.

5. By now six patients have been away from the institution for 31 months, 49 for more than two years, 73 for more than one year, and 47 for less than one year.

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Treatment in a Child Guidance Clinic

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This paper discusses in a general way the more common treatment procedures and patterns used in a child guidance clinic. While there is considerable variation in details of operation among clinics it is possible to identify certain generally accepted patterns and procedures. Variations are dependent upon such factors as availability of professional staff, orientation and training of staff members, local prejudices and other factors. Problems related to treating patients in a child guidance clinic will also be discussed. To comprehend current and emerging patterns of treatment the developmental history and historical background is helpful.

Historical Background:

The modern child guidance clinic did not exist prior to the twentieth century. Credit for establishment of the first of these clinics goes to Healy, who (in 1909) set up in Chicago, the Juvenile Psychopathic Institute. This has since become the Institute for Juvenile Research. Other cities shortly thereafter established similar facilities. Among these was the Louisville (Ky.) Child Guidance Clinic opened in 1913. In 1917 Healy moved to Boston to open the Judge Baker Foundation which has since become the Judge Baker Guidance Center.

Three years later (1920) impetus was given to the movement by the assistance and encouragement extended to interested communities by the Commonwealth Fund through the National Committee for Mental Hygiene. Under the auspices of this committee seven demonstration clinics were set up. The oldest of these (1921), The Cleveland (Ohio) Guidance Center, is still probably the best example of a community child guidance clinic. This committee was also responsible for the establishment of high standards for services and professional competence. These clinics were staffed by paid professional personnel composed of psychiatrists, psychologists and psychiatric social workers.

During the last 35 years the number of clinics has steadily increased and following World War II assistance with federal and state funds resulted in accelerated growth of child guidance clinics. In spite of this rapid increase as late as 1956 only 23 states had treatment clinics for children.

Problems

A. Who Is the Patient?

Among the many complex problems with which clinics have been struggling for the past 50 years is that of deciding "who is the patient?" when parents consult them about difficulties with one of their offspring. This question is complicated by several factors: (1) Disturbed children usually have disturbed parents who are often more disturbed than the offspring. (2) Many parents consulting child guidance clinics are really seeking help for themselves and only bring the child as a "hostage" to save face with their family, friends and associates. (3) Parents often bring the least disturbed child first and only after months of therapy is this fact made known to the clinic staff.

Initially most clinics (and private practitioners, too) regarded the child as the patient and devoted relatively little attention to the parents. Efforts to help the child varied from environmental manipulation to attempts to treat the child by classical psychoanalytical techniques including a couch. While these efforts met with a measure of success it became increasingly evident that the child-parent had parents or parent surrogates who often complicated and sometimes frustrated efforts to help the child.

Out of these experiences came a shift in emphasis. Many clinics began to regard the parents as the patient. According to this school of thought a child was but a lump of clay to be molded for good or bad by the parents. Therefore, to help the child one needed only to "straighten out" the parents. Remnants of this viewpoint still persist.

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From Mental Health Center, Nashville, Tenn.

While there is a certain amount of truth in this idea (just enough to keep it alive) experience has revealed that the emotional problems of children are usually too complex and deeply internalized to be resolved solely by changes in their parents. Such a view also naively overlooks the role of the child in the etiology of his illness and in this he may be a major contributor.

Recognition of the limitations of working with either child or parents alone resulted in working with both of them simultaneously. This is the most widely used procedure at the present time. Again, in using this approach, clinics have been plagued with the question, "Who is the patient?" A partial solution has been worked out whereby the child is regarded as the primary patient and his parents or parent surrogates as collateral patients. While there appears to be general agreement as to what is meant by a primary patient much confusion exists concerning the role and status of collateral patients. Primary patients are, of course, persons who are receiving therapy for their own problems. Collateral patients are persons who are theoretically receiving a lesser kind of therapy designed not to help them with their own emotional difficulties but to help them help the primary patient overcome his difficulties. Such a concept naively assumes that collateral patients are in effect, assistant therapists and minimizes their role in the primary patient's illness. Collateral therapy is supposedly primary patient-centered and the worker is admonished not to deal with the collateral patient's own problems. His role is to help the collateral patient better understand the primary patient and learn to handle relationships with him more effectively. Unfortunately, most of the parents who consult child guidance clinics are unable to do this until they have resolved many of their own emotional conflicts. The futility of giving advice to such parents has been amply demonstrated. In short, they need help for themselves before they can alter their feelings, attitudes, and behavior toward their offspring. Under such circumstances the harassed therapist is faced with the dilemma of either attempting to deal with his patient's problems directly or to refer the collateral patient elsewhere for such direct help while continuing to keep his own work with the parent child-centered. Many collateral patients are unwilling to accept such a transfer. Even when the transfer is made the attempt to seek help in one setting as a primary patient and in another as a collateral patient is often beyond the capacity of even the most versatile parent.

Another contributing factor in this problem is the reluctance of many parents to accept the role of a primary patient. They come to the child guidance clinic as they would take their child to the pediatrician. The clinic is consulted about a disturbed and often disturbing child not a disturbed parent. The same expectation of something being done to and for their child with a minimum of involvement on their part is present. While this attitude can be resolved during the process of evaluation it is often a serious obstacle to the success of the clinic's efforts to help the family.

Because of these and other complications a new answer to the question "Who is the patient?" is gradually emerging. Many clinics are now becoming family-centered in their approach to treatment and their answer is that the family is the patient. In terms of what we now know about the etiology and dynamics of emotional illness in children this answer would appear to be more rational than its predecessors and overcomes many of the limitations of former approaches to treatment with children. Each involved member of the family becomes both a primary and a collateral patient. The therapist of each involved member of the family must be prepared to give help not only in assisting his patient in resolving his own difficulties but also to better understand the other members of the family and to handle relationships with them more satisfactorily.

Such family-centered therapy makes great demands upon the skill and resourcefulness of the therapist. It requires the availability of senior staff members to provide supervision and consultation to lesser trained members of the staff. The increasing frequency with which psychologists and psychiatric social workers are receiving training in the art of psychotherapy is contributing much to making such family-centered therapy feasible and effective.

B. Who Treats the Patient?

Traditionally children have been treated by child phychiatrists and to a lesser extent by psychologists while parents were seen by psychiatric social workers. Today the trend is to disregard professional affiliations and to use staff members in terms of the skills they possess. Hence any member of the mental health team may be treating a child or the parents. This becomes increasingly true as the practice of family-centered therapy becomes more widespread in child guidance clinics. Since each involved member of the family is dealt with both as a primary patient and a collateral patient the answer to the question "who treats the patient?" is "the mental health team."

In recent years clinics have been adding new members to this team. It now consists of not only psychiatrists, psychologists and psychiatric social workers but also social group workers, mental health nurses and, in some places, remedial education therapists. These additions have enabled clinics to offer a more comprehensive pattern of services.

Therapy Techniques

The therapeutic techniques employed in child guidance clinics vary with the training and orientation of their staff members. Staffs of some clinics are predominantly adherents of only one type of treatment whereas in others several schools of therapy may be represented. Predominantly, however, child guidance clinics have been deeply influenced by the concepts of Meyer and Freud.

Therapeutic techniques have advanced from environmental manipulation as a means of influencing behavior to a more and more refined psychotherapy. A form of psychotherapy known as play therapy has been developed and is now generally used in treating children in the pre-school, latency and early adolescent age groups. This involves the use of carefully selected play equipment to facilitate establishment of rapport with the child and to encourage the overt expression of feelings, attitudes and conflicts disturbing to him. These can then be dealt with by the child's therapist in helping resolve the difficulties.

Older adolescent children and parents are treated by the usual interview techniques. The intensity and depth of such therapy varies with needs of the patient and the skill of the therapist.

While most patients receive individual therapy there is an increasing tendency to work with both children and adults in groups. This has come about not as a means of seeing more patients for a given period of time but because of a growing awareness that the needs of many patients are often better met in group therapy than individual therapy. Many patients receive both group therapy and individual therapy. Sometimes this is done concurrently; at other times one follows the other. While the use of group therapy in resolving difficulties in peer relationships has been proven, its usefulness as a terminal experience to test out and solidify gains made in individual therapy is being extensively explored.

Although environmental manipulation continues to play an important role in therapy with children, it, alone, is seldom enough to resolve the child's difficulties. Nevertheless, because of complications in the life situation of a child and/or the nature and severity of his illness it is sometimes the only feasible approach to at least partially relieving his distress. This can best be accomplished through the media of consultation services to parents, welfare workers, teachers, public health nurses and other persons involved in working with the child.

The therapy with parents and parent-surrogates is usually focused upon helping the parent better to understand the nature of the relationship with the child and to develop more effective ways of handling these relationships. Inevitably the parent's therapist is forced to help him recognize and deal with many of his own conflicts and reactions. Not infrequently the outcome of therapy with the child hinges upon the success of parents in resolving their own difficulties. Most children are unable to benefit from therapy until permitted to do so by their parents.

Summary

Some of the complex problems involved in treatment in a child guidance clinic have been discussed. Current trends and treatment procedures were briefly described.

Twenty Month Study of Iproniazid Therapy

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This study consisted essentially of evaluating the results of treatment with iproniazid of 142 psychiatric cases. It covered the 20 month period from May 1957 to January 1959. Only those patients were included who took the drug for at least two months and co-operated with follow-up examinations during the study. The case material was as follows:

Manic-depressive disease	122 cases
Psychoneuroses	14 "
Schizophrenias	6 "

Manic-Depressive Disease

For purposes of evaluating the results, the 122 cases of manic-depressive disease were divided into the following groups:

GROUP I	
Treated previously with EST	57 cases
GROUP II	
Not treated previously with EST	49 "
GROUP III	
Treated with EST and followed-up with iproniazid	16 "

Group I Depressions

Of the 57 cases in this group, 43 had shown one or more attacks of depression only, and 14 had shown one or more attacks of depression with one or more hypomanic attacks. There were 37 previous hospitalizations in the group, and five patients had attempted suicide in attacks prior to the study. The duration of the illness was as follows:

1- 5 years	27 cases
5-10 "	24 "
10-15 "	4 "
15-20 "	2 "

The number of courses of EST previously administered to the group was:

1 course	25 cases
2 courses	8 "
3 "	7 "
4 "	9 "
5 "	5 "
6 "	3 "

The average duration of illness was 7.0 years, and the average number of attacks previously treated with EST was 2.4. During the study, none of the group was agitated or actively suicidal; all were ambulatory. All were private patients for some time during the past 15 years and had been treated personally by me. The last attack of depression for which EST was given had occurred six months or more before the present study was begun. All patients in this group had always responded to EST by remission or improvement. There were no failures.

Table I shows the comparison of results of cases in Group I previously treated with EST and recently treated with iproniazid:

TABLE I

	Total Cases	Remission	Improved	Unchanged	% Response
EST	57	47	10	0	100%
Iproniazid	57	40	12	5	84%

(The remissions and improved cases are grouped as "favorable results" in the Summary.)

There were nine cases which required subsequent EST. These consisted of the five unchanged cases and four other cases, which during the study had achieved remission or improvement but which relapsed and preferred EST to iproniazid again.

The duration of iproniazid treatment in the 48 patients was as follows:

A. *Patients no longer taking iproniazid:*

Over 10 months	2 cases
2-10 months	8 "

B. *Patients still taking iproniazid as of February 1, 1959:*

15-20 months	16 cases
10-15 months	17 "
2-10 months	5 "

Group II Depressions

The 49 cases in this group were all ambulatory. They consisted of 31 cases with depression only, five with depression and previous episodes of elation, nine with depression in the involutional period, and four cases of depression with alcoholism. All patients had been ill for less than five years, and none had previous EST. None of the group was agitated or suicidal. Of this group 33 were candidates for EST. Table II shows the results of treatment of Group II depressions with iproniazid:

TABLE II

Total Cases	49
Remission	30
Improved	16
Unchanged	3
Required EST	4
% Response	85%*

*In determining this percentage, only 33 of the 49 cases, i.e., those depressions which were candidates for EST were considered statistically. If all 49 cases were considered, the figure would be 93%.

The four cases requiring EST consisted of the three unchanged cases and one case which had improved with iproniazid but relapsed and preferred a trial of EST.

The average duration of iproniazid therapy was four months. The duration of continued remission or improved state after cessation of iproniazid was:

10-16 months	14 cases
5-10 months	10 "
1- 5 months	4 "

17 cases are still receiving iproniazid.

Group III Depressions

The 16 ambulatory cases in this group consisted of 10 cases with depression only and six cases with depression in the involutional period. Six were agitated depressions, one had made a previous suicidal attempt, and five had previous EST. Table III shows the results with EST of these 16 cases which were treated with EST and followed up with iproniazid.

TABLE III

Total Cases	16
Remission	13
Improved	2
Unchanged	1

The duration of iproniazid treatment in these cases has been:

15-20 months	2 cases
10-15 months	10 "
5-10 months	2 "
2- 5 months	2 "

There were no relapses, and there has been no need for further EST in these patients thus far. Of the 13 remissions, five had had previous EST. These five patients believed that iproniazid contributed to their maintained state of well-being; 15 cases are still taking the drug.

Psychoneuroses

Table IV shows the types and results of the 14 ambulatory cases of psychoneuroses treated with iproniazid:

TABLE IV

Type	Marked Improvement	Improvement	Unchanged
2 Depressive	1	1	0
6 Mixed	0	3	3
6 Obsessive-Compulsive	6	0	0

The most outstanding result noted was the marked improvement in all six of the obsessive-compulsive group. Table V gives further details concerning these patients. These six cases, incidentally, represent all the severe obsessive-compulsive cases in my practice.

TABLE V

Case	Type	Duration Years
1	Hand-washing	20
2	Body-washing	15
3	Hand-washing	8
4	Religiosity	25
5	Inability to write name	5
6	Inability to leave house alone	5

Previous Treatment	Duration of Iproniazid Treatment in Months
Hospitalization, psychotherapy, EST, drugs	16
Hospitalization, psychotherapy, drugs	13
Psychotherapy and drugs	12
Hospitalization, psychotherapy, EST, drugs	10
Psychotherapy and drugs	10
Psychotherapy and drugs	5

Five of the above patients are still taking iproniazid.

Schizophrenias

Table VI is a comparison of results in the six ambulatory schizophrenias, paranoid type originally untreated or treated with EST and/or insulin and later treated with iproniazid:

TABLE VI

Case	EST and/or Insulin	Result	Result with Iproniazid Treatment
1	None	——	Worse—delusions increased
2	None	——	Worse—delusions increased
3	EST and Insulin	Improved	Improved
4	EST	Improved	Worse—delusions increased
5	None	——	Unchanged
6	EST	Improved	Improved

Dosage

For the first six months of the study, the initial dose ranged from 30 to 150 mgs. daily, the majority of cases receiving 100-150 mgs. It was found that a lower dose would lessen the unpleasant side effects. For the remaining 14 months of the study, the initial dose ranged from 30 to 75 mgs. daily, the majority of cases receiving 50-75 mgs. The initial dose was maintained from 4 to 8 weeks (improvement or remission usually occurring from 3 to 7 weeks) and then gradually withdrawn over the next eight weeks or maintained at a level of from 25 mgs. every three days to 75 mgs. daily in a few cases.

For the last 15 months of the study, all patients received 25 or 50 mgs. of pyridoxine daily.

Since the beneficial effects of iproniazid were slow in appearing (in my experience not before two weeks), some patients were given barbital in twice daily doses occasionally with small doses of one of the amphetamines for relief of symptoms. These drugs were discontinued after two or three weeks, except for a sedative at night if sleep disturbance persisted or seemed exaggerated by the iproniazid.

All patients were instructed as to possible side effects and told of the importance of combatting constipation by laxatives. It must be stressed that iproniazid is a potent drug, that patients must be watched closely and the dosage must be altered as patient's condition warrants.

Side Effects

The side effects in order of frequency were constipation, dryness of the mouth and throat, insomnia, urinary frequency or delay in starting urination, excessive sweating, dizziness, jerkiness of extremities, paresthesias, loss of sexual potency, edema, and chest discomfiture. On the original higher dosage, these were common, but it was interesting to note how little the patients complained. On the lower dosage, the side effects were milder and less frequent. As before, the patients often failed to mention side effects unless they were specifically asked. In all cases, side effects were easily controlled either by increased use of pyridoxine and lowering of the dose, or in a few cases by stopping the iproniazid for three or four days and resuming at a lower dosage.

Listed in Table VII are seven conditions observed in 17 patients of the group studied which might be considered complications, but all of which were not necessarily related to iproniazid toxicity. In none of these 17 cases was the drug completely discontinued. The condition, if associated with iproniazid, was alleviated by stopping the drug for a few days or reducing dosage.

TABLE VII

Condition	No. Cases	Opinion
Hypomania	7	Related to iproniazid
Syncope	2	——— " ———
Marked weight increase	3	——— " ———
Urinary bleeding	1	Not related to iproniazid
Marked edema	2	Related to iproniazid
Spontaneous wrist drop	1	Not related to iproniazid
Kidney stone (operation)	1	——— " ———

Throughout this study, no cases of jaundice were observed.

Other Observations

The following observations were made during the study. No attempt has been made to evaluate them statistically; however, they may be of interest to others who are using iproniazid or who will be studying analogs in the future.

The increase in appetite which so often occurs is often accompanied by an increased desire for sweet foods, candy in particular.

Patients who in the first two weeks showed little or no side effects seemed more likely to benefit from the drug.

After an iproniazid failure cases seemed to respond better to EST.

EST was given to some patients receiving iproniazid with no ill effects.

The impression was gained that, with the dosage of iproniazid used, there was no particular increase in the action of barbiturates.

No withdrawal symptoms were seen.

Mild edema of the face or legs was fairly common and cleared in some cases without stoppage or dose reduction.

Some patients reported that chronic constipation was improved with iproniazid.

Sexual impotency often disappeared even though the drug was not stopped or reduced.

Many patients objectively "looked better"

one or two weeks before they felt subjective improvement.

Summary

1. A group of 57 selected depressions of 7.0 years average duration, who had an average of 2.4 courses of EST with 100% favorable results, showed a response of 84% favorable results with iproniazid.

2. A group of 49 selected depressions of five years average duration who had not had EST showed 85% favorable results with iproniazid.

3. Of a group of 16 depressions treated with EST and followed up with iproniazid, five have apparently responded better than when treated with EST alone.

4. A group of six severe obsessive-compulsive cases have shown marked improvement with iproniazid treatment, where other therapies were ineffective.

5. A group of six paranoid schizophrenias in three cases did worse, and in three cases did no better, with iproniazid treatment as compared with other physical therapies.

6. The side effects and complications were disadvantages of iproniazid therapy. Both were readily controlled by altering dosage.

Conclusion

Iproniazid, in a 20-month study of 142 psychiatric cases in a private psychiatric practice, has been found an effective treatment for selected depressions and severe obsessive-compulsive neuroses.

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Convulsions and Delirium Incident to Glutethimide (Doriden) Withdrawal (A Case Report)

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Glutethimide, alpha-ethyl alpha-phenyl glutaramide or Doriden (Ciba), has been widely used as a "non-barbiturate" sedative and hypnotic. In clinical usage, it resembles the short-acting barbiturates. It is a central nervous system depressant, anti-convulsant,[1] and produces electroencephalographic patterns on acute administration similar to those of barbiturates.[2] Initially, it was claimed that side effects were minimal and that the drug enjoyed a real advantage over its hypnotic rivals. However, it has now been accused of causing nausea, skin rashes, grogginess, dizziness, hangover, dryness of the mouth, "cottony bad taste," confusion dysarthria, ataxia, excitement and feelings of "heaviness."[3]

An increasing number of serious poisonings from glutethimide, as well as a series of fatal cases have been reported.[4] The clinical feature of overdosage include deep and sometimes prolonged coma, hyporeflexia, hypotension, rapid, shallow respirations and flaccid paralysis. McBay and Katsas[4] emphasize that the lethal dose is in the range of 10-20 gms., lower than previous estimates.

There have been three cases reported which are of particular interest in terms of the thesis of this paper. Eidelman[5] described the case of a woman who ingested ten 0.5gm. glutethimide tablets, was found in coma and hospitalized. Although the musculature was generally flaccid and tendon reflexes absent, she was observed during the first 24 hours of hospitalization to have repeated episodes of tonic spasm, which were variously focal or generalized. Frank convulsions, apparently of grand mal type, were observed on two occasions. Rowell[6] reported a woman who ingested 10 gm. of the drug. Shortly after admission, she suffered laryngeal and carpo-pedal spasms of two minutes duration which resembled classical tetany. Intermittent tetanic spasms of her limbs occurred during the next 12 hours. Serum calcium was normal, there was a "mild acidosis" and the spasms were not relieved by intravenous calcium gluconate. The third case of interest, reported by Bordeleau, et al.,[7] was that

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of a young man who took 6 gms. of glutethimide. At admission, he was in light coma but restless. He regained consciousness after 48 hours but was so agitated that sedation was necessary. On the fifth hospital day, he developed convulsive seizures.

Crucial information missing in the above case reports is whether or not the patients' exposure to glutethimide was limited to the massive dose which occasioned hospitalization. It is quite likely, considering that the drug is commonly prescribed for emotional illness or insomnia, that these patients may have been taking glutethimide in appreciable quantity before overwhelming psychic distress impelled them to a suicidal dosage. Without this information, it is impossible to determine whether the convulsive behavior reported in these three cases was an effect of acute intoxication or in reality convulsive manifestations of a withdrawal syndrome incident to rapidly falling blood levels of the drug when intake was terminated by coma and hospitalization. The third case, characterized by several days latency during which additional "sedation" for agitation may have suppressed the withdrawal syndrome, strongly suggests the latter possibility. Other reported cases of acute intoxication,[4] as well as one in our own experience, did not feature convulsive behavior. One can speculate that previous pharmacological addiction to glutethimide may account for this difference.

It has been claimed that glutethimide is non-addicting and does not produce a withdrawal syndrome. While there is evidence that the latter does not occur following chronic administration to dogs,[8] the absence of withdrawal effects has not been proven in the human. So far as we can learn, there have been no reports of addiction. It has been noticed, however, that some patients complain of intensified anxiety upon withdrawal from modest doses of glutethimide.[9] Similar clinical observations about meprobamate were made before its addicting potential was fully appreciated. The purpose of this case report is to suggest that withdrawal from excessive doses of glutethimide induces a severe reaction characterized by delirium and convulsions.

Case Report

A 34 year old woman, previously employed as an insurance agent, was admitted to the Salt Lake County General Hospital on June 29, 1958. Her mental state was so severely disordered that the history had to be obtained from her roommate, a registered nurse, and from her sister and mother who had been in contact with the patient during the previous week. According to these informants, she had become emotionally disturbed following a hysterectomy for fibroids in July 1957. This was evidenced by anxiety, depressive feelings and insomnia. Seven months before admission, she was given glutethimide to help her sleep. On her own initiative, the patient gradually increased the dose until she was taking five or six 0.5 gm. tablets daily, having been reassured that the drug was not dangerous or habit-forming. Fifteen days before admission, she was given a prescription for one hundred 0.5 gm. tablets. This prescription bottle was found empty, concealed beneath the patient's mattress, when her apartment was searched on Jne 30. During this two week period of excessive dosage, she showed increasing signs of behavioral toxicity with thick speech, drowsiness, staggering and mental clouding. She appears to have increased her dosage because of habituation and confusion rather than with suicidal intent. Although the cause of her disability was not recognized, the patient was becoming so obviously ill that her mother was called from a neiughboring state and moved in with the patient on June 25. It was not possible to learn at what point the patient exhausted her glutethimide supply. Her mother felt reasonably sure that the patient had not had drugs after her arrival. However, three days before admission, she was found to be confused, disoriented, incontinent of urine and was expectorating blood from a bleeding tongue. The probable seizure was not witnessed. The following day, two typical grand mal seizures were observed, with post-ictal behavior like that of the previous day. There was no past history of epilepsy, head injury, alcoholism or ingestion of other drugs.

At the time of admission, she was confused, irrational, and amnesic for the events of her illness. There were multiple bruises on her arms and legs and her tongue was severely lacerated about its entire margin. Blood pressure at admission was 116/78 and pulse 109. Her general physical and neurological examinations were otherwise not remarkable. Skull films and spinal fluid dynamics, cell count, and protein were normal. On the day of admission she had another grand mal seizure and three more the following day despite 100 mgm. phenobarbital q.i.d. and dilantin 0.1 gm. t.i.d. Between convulsions she was observed to have transient tonic spasms of her limbs and facial muscles and remained disoriented, restless and incontinent. Gradual recovery occurred over the course of the next two weeks. Anticonvultant medications were omitted on the eighth hospital day without recurrence of seizures.

On June 30, the day after admission, the electroencephalogram was grossly abnormal. The predominant background consisted of generalized 3-5 cycle per second activity of medium voltage; this was intermixed with runs of a 1-2 cycle per second, irregular, high voltage pattern. There were minor, shifting asymmetries in the temporal area but no constant lateralization or focus. The electroencephalographic picture was interpreted as consistent with a post-ictal state or diffuse encephalopathy.

On July 11, the electroencephalogram tracing showed marked improvement. The basic pattern was a medium amplitude, somewhat irregular alpha rhythm which centered around 10 cycles per second. This was occasionally replaced by short runs of 4-7 cycle per second activity. The basic pattern of the record was interpreted as within normal range and the over-all record only mildly abnormal. Electroencephalogram was repeated on August 8 and again on September 4. The minimal abnormalities present on July 11 persisted. It can be assumed that this pattern is characteristic of the patient and constituted a potential dysrhythmia which enhanced her susceptibility to convulsions during withdrawal.

Summary

The case reported describes a patient who became addicted to glutethimide over the course of seven months, culminating in a 10-day period during which she is known to have taken at least one hundred 0.5 gm. tablets. Increasing behavioral toxicity occurred with overdosage. Insofar as the details of her illness can be reconstructed, it appears that within 2-3 days of exhausting her supply of glutethimide, she suffered a withdrawal syndrome which was ushered in by a convulsive seizure which, though not witnessed, can be inferred from the behavior of the patient. Two typical grand mal seizures were observed the following day and several more during the three days thereafter. Tonic spasms of her limbs and facial musculature were observed between seizures. Her mental state during this time was an admixture of post-ictal disturbance and a toxic psychosis. She recovered gradually over the course of two weeks. Memory deficit was a conspicuous feature, probably attributable to multiple grand mal seizures.

Despite expectations to the contrary about "non-barbiturate" hypnotics, it is not surprising that glutethimide should share a liability to cause addiction and withdrawal with its barbiturate cousins. It is a central nervous system depressant, has anti-convulsant properties, produces similar electroencephalographic changes and has a chemical configuration similar to the barbiturate nucleus. As is the case with barbiturates, it has been reported[6] that glutethimide intoxication responds to treatment using bemegride (Megimide) as an antagonist.

The case presented suggested that glutethimide may have to be classified with alcohol, barbiturates and meprobamate as a drug producing a withdrawal syndrome complicated by convulsions. Further case reports will, of course, soon substantiate or disprove this possibility. Meanwhile, physicians should be alert to the possibility that withdrawal syndromes may occur with structurally similar hypnotic drugs.

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The Essence of Medical Research

(Writing, Publication and Presentation to Meetings)

CONRAD M. AYRES, M.D.*

The title "Essence of Medical Research" is here used to designate the final stage of medical research, connected with its coming into actual being through writing, publication, and presentation to meetings. This stage is distinct from the preliminary stages of research involving conception, planning, devising, observation, and recording of the experiments.

In previous articles on methodology in medical research the author has dealt with basic statistical concepts[1] and graphic illustration.[2] When one's experiments have been completed and the results suitably organized through tables for statistical analysis and graphs or diagrams for demonstration of the most conclusive data from the tables, the research scientist is faced with the task of preparing a correct and clear exposition of his findings in a paper accepted for publication.

The first step in publication of a paper is favorable consideration by the editor of a medical journal. The editor's position is a challenging one. He must keep abreast of new trends in medical research, be well informed on publication problems, and also be endowed with understanding of human personalities, particularly those of his authors and readers. The latter eagerly look for papers with original findings and conclusive results. This is the very type of paper which the editor aims to provide for his journal, but which, unfortunately, is not easy to find. However, the editor may demand from his authors that they comply with several requirements concerning the following elements: manuscript, illustrations, deadline and limits of space for publication. These requirements form the main subject of this paper, which also contains notes on presentations to meetings.

Manuscript

The manuscript contains the findings of the author's research. It, therefore, constitutes the basic element of medical writing. In preparing the manuscript the following items are to be considered:

1. *Form and Appearance:* A neat typescript, double spaced, with 1½ inches of margin on all sides, on 8½ x 11 inch bond paper is required. Proper spacing and margins make it easier for the editor to read the manuscript and insert corrections or suggestions. In addition, they are used by editor and proof-reader for instructions to typesetters and printers.

The title of the paper, the author's name and affiliation, and, when applicable, acknowledgments of subsidies and grants should appear on the first page of the typescript.

2. *Style.* Grammar, syntax, punctuation and logical organization of language should be observed in medical writing as in any other form of writing. Telegraphic style and profusion of words are both to be avoided. Involved and poorly constructed sentences should not be used. Sentences should be brief, clear and simple. Lengthy, but well-constructed sentences, when sparingly used, may be effective.

Lightness of style has a place in medical writing but it is a limited one. An occasional pleasantry in an otherwise factual paper can be refreshing for the reader. However, this can be overdone with the result of detracting from the value of the paper.

3. *Colloquialisms and Abbreviations:* Colloquialisms which may cause misunderstanding, such as the term "splenic tumor" for enlargement of the spleen, are to be avoided.

Abbreviations are permissible only after they have first appeared in parentheses following the terms for which they stand but they ought to be used sparingly. Moreover, one should guard against abbreviations which correspond to profane words in ordinary language, such as Ass. for Assistant, or S.O.B. for shortness of breath.

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4. *Eponyms:* Technical nomenclature is preferable to proper names, especially when such nomenclature is officially accepted. It avoids arguments on priority claims and is usually more meaningful. Naturally, there may be exceptions. I, for instance, prefer to call a certain disease "multiple tics syndrome" than "Gille de la Tourette's disease." On the other hand, a scientist who did research on this disease and possibly made valuable contributions to its understanding and treatment, may prefer to call it "Gille de la Tourettes disease"—for reasons of habit and devotion to the discoverer. The value of a paper rests on its contribution to scientific knowledge not on its use or nonuse of eponyms.

5. *Revisions:* Careful revision of the manuscript may make the difference between a first-class paper and a second-rate one.[2] However, revisions should be made before submitting the paper to the editor and certainly before it goes to press. Changes in galley proof, besides being costly, reveal lack of organization and preliminary planning on the part of the researcher.

6. *References:* References must be carefully checked for accuracy. In the text, they are best designated by numerical superscripts which correspond to the numbers in the Bibliography or List of References. The bibliography should be typed on a separate sheet following the text. References are to be listed in the Bibliography either alphabetically by authors or in the same order as mentioned in the text. Each periodical has its own requirements for bibliographic form and writers should conform to this Fortunately, a trend toward uniformity in bibliographic form is apparent through increasing adoption by medical journals of the style of the National Library of Medicine.

Illustrations

For detailed information on graphic illustration, the reader may consult the author's paper.[2] However, a few remarks concerning publication of illustrations seem appropriate.

All types of illustrations: charts (including statistical tables and graphs or diagrams), drawings, pictures, etc., must be suitable for reproduction. In order to avoid overtaxing editors and publishers with elaborate search for identification, illustrations must be identified with the author's name, the title of the paper, and the particular figure number and caption either on the reverse ure number and caption either by a flap of paper attached to the illustration or by notations on the illustration. In photographs or photostats the figure number and caption can be incorporated within the illustration itself or at the bottom thereof.

Heavy pen or pencil writing on the reverse side are to be avoided because they produce indentations with corresponding Braille effect on the face of the print and cause defective reproduction.

Deadline and Limits of Space for Publication

1. *Deadline for Publication:* The time set by the editor for submission of a paper for publication should be carefully complied with, since it is impossible for periodicals to appear on schedule unless established deadlines are met by all concerned. In general authors are ready to comply with this requirement. This is perhaps due to some extent to the unconscious reward for their labors which they anticipate from the display of their talents with consequent gratification of their natural narcissism. However, some authors, in dispassionate pursuit of truth and quest for perfection are led to excessive revisions of their drafts. Unending revisions will lead inevitably to unreasonable delays in submitting the final draft of a paper for publication. Thus it may happen that a paper reaches the editor after the deadline and its publication is delayed.

2. *Limits of Space:* Researchers at times find it difficult to condense in relatively brief reports, with clarity and by the established deadline, the result of their extensive labors. However, the number of words or pages which the editor allots to a paper for its publication must be carefully adhered to, otherwise writers may find their work cut at places which they consider most inappropriate.

Presentation to Meetings

The program committee of an association decides on the acceptance of papers favor-

ably considered by the secretary of the association for presentation to its medical meetings. The material for presentation has a two-fold aspect: auditory and visual. The auditory presentation must take into consideration a particular disadvantage of the audience as compared to the readers. Readers may protect themselves from possible dissatisfaction with articles in a medical journal by choosing a time when they feel rested and comfortable for their reading, and by skimming through or even skipping part or all of articles which do not appeal to their interest. On the other hand the audience at medical meetings may find it difficult to concentrate on a series of technical and complicated papers and must listen with grim endurance or fall asleep. Therefore, the text for presentation to an audience is appropriately lighter and briefer than the paper for publication. Also, the oral presentation must not exceed the limits of time allotted by the chairman.

To complement oral presentation visual presentation may be used, including exhibits and photographic projection.

1. *Exhibits:* The value of exhibits to the audience, like that of printed charts to the reader, is in their readily comprehended information, which in turn rests on their simplicity.

2. *Photographic projection:* Material for projection is mainly of two kinds: a) photographic slides and b) "Vu-graph"[3] or "Visualcast"[4] slides, of relatively recent use at medical meetings.

a. Photographic slides should preferably conform to the 3¼ x 4 inch size of prevalent use, which also corresponds, in reduced size, to the standard proportion of illustrations for publication.

b. The "Vu-graph" or "Visualcast" technique, also known as the "over-the-shoulder" projection, offers distinct advantages over photographic-slide projection. It eliminates the need for a separate person to operate the projector, which is placed on a table in front of the speaker, while the screen is behind and above him. It also enables the speaker to face his audience and permits the room to remain lighted during the projection.

Summary

The criteria for acceptability of medical research papers for publishing may be summarized as follows:

1. Subject matter should provide observations from experiments performed according to basic scientific and statistical concepts.

2. Report should be made in a straightforward style, without colloquialisms, ambiguous abbreviations or unnecessary eponyms, and be neatly typewritten on one side of bond paper.

3. Illustrative material, when applicable, will prove of distinct advantage. It should be prepared in a form suitable for reproduction, and be properly identified.

4. References must be checked for accuracy. They preferably are marked in the text by numerical superscripts and listed with corresponding numbers on a separate sheet or sheets.

5. Articles should be submitted before the established deadline, without need for revisions or extensive corrections on galley proofs.

Once his research is completed, the paper delivered, and the requirements for publication fulfilled, the weary worker is certainly entitled to rejoice in a well-earned rest. However, paradoxically enough, many of us will find ourselves, more or less unconsciously, making notes for our next project, hoping that it will prove more valuable, deserve greater recognition, and, perhaps bring us closer to basic truths.

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Changing Nature of State Hospital Populations

ARTHUR L. SEALE, M.D., MARVIN MILLER, M.D., CHARLES WATKINS, M.D., and CECIL WURSTER

We are all aware that the mental hospital has undergone considerable change in all its aspects since its establishment in this country over a century ago. Such changes are being continually reported in the literature. We are reporting changes and trends noted in admissions to and resident population of a state mental hospital. Our data were studied along the parameters of number, age of patients, selected diagnostic categories and race and sex of patients.

Findings and Discussion

Total admissions to the hospital rose from 471 in 1942-1943 to 1317 in 1956-1957. First admissions (no previous history of admission to any mental hospital) rose from 369 to 885 in the same period. However, since a dip in 1953-1954 the number of first admissions has risen more slowly and in fact appears to be leveling off. Readmissions (history of at least one previous admission to any mental hospital) the difference between total admissions and first admissions rose from 102 to 432 in the same period. Since the 1953-1954 dip readmissions have risen steadily as opposed to first admissions.

Percentage-wise first admissions comprised 77% of total admissions in 1942-1943 but had dropped by 1956-1957 to 67%. In the same period readmissions rose from 23% to 33%.

The average daily population has risen from 2325 to 3050 since 1942-1943 at a fairly steady rate.

If the above data are graphed on a rate of change (Figure 1) basis it is seen that the rate for readmissions is increasing. Whereas, rates for first admissions and average daily population have decelerated; this disparity of rates being most noticeable since the 1954-1955 fiscal year.

It is obvious that there has been a greater turnover of patients or in other words a trend toward reducing the average hospital stay per patient, else the rates of increase for average daily population and total admission would be the same. Spot checks of the resident population at the end of fiscal years 1940-1941, 1945-1946, 1950-1951, and 1954-1955 reveal that of the first admissions during those years 45% were paroled within three months in 1940-1941; 60% in 1945-1946; 70% in 1950-1951, and 74% in 1954-1955. Percentages for parole for the fourth through the sixth month period following admission for these four years were: 19%, 16%, 13%, and 12%, respectively. And for parole from the seventh through the twelfth month percentages were: 10, 6, 6, and 7%, respectively, for these years. Percentages for total first admissions paroled up to a year following admissions for the years noted ran 74, 82, 89, and 93%, respectively.

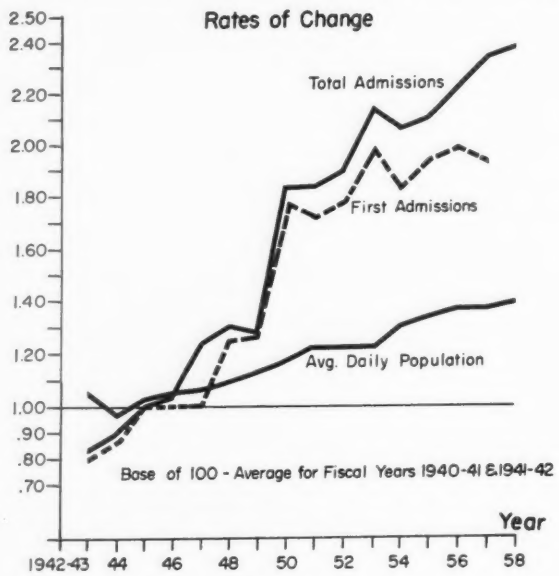

Figure 1.

This raises the question as to whether reducing the average hospital stay per patient increases the probability of his being readmitted at a later date. We are currently studying readmission data to determine this.

Significant also is the fact that no remarkable variation has occurred in the rate of increase of the resident population, in spite of the noticeable peaks and dips in the rates

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for admission. This presents the distinct probability that discharge rates may be primarily a function of the number of patients in the hospital at any given time. This is seen most strikingly in 1949-1950 where total admissions rose sharply, yet no similar increase is noted for the resident population. Obviously, the number of discharges must have increased to accommodate the increased number of patients admitted.

We would speculate about the spurt in the readmission rates since 1954-1955 as being a function of the introduction of the intensive use of the tranquilizers in that year and their effect perhaps in reducing overt symptomatology of the patient to the point where he appears well enough to leave the hospital only to be readmitted later.

Because there has been variation in the number of first admissions over the years we feel that it is too soon to draw any generalizations from the leveling off of first admissions. It does appear, however, that a first admission threshold may have been reached.

Age of Patients:

First admission patients were grouped by age into those 24 and under: 25 to 44; 45 to 54; 55 to 64; and 65 and over. These (Figure 2) revealed that the percentage of patients 65 years and over has been increasing steadily since 1928; 10% of total first admissions in 1928 to 19% of total first admissions in 1957. Similarly, the 55 to 64 group has increased from 8% to 12%; the 45 to 54 age group has fluctuated annually and a trend is difficult to see. The 35 to 44 age group comprised 14% of first admissions in 1928 and in 1957 had risen to 20%. Both the 25 to 34 and 24 and under groups dropped percentage-wise from a total of 55% in 1928 to 33% in 1957.

The same data was plotted on a rate of change basis for the years 1942-1943 to 1956-1957 in groups 65 and over; 45 to 64; 24 to 44 and 24 and under. These data show the greatest increase in rate of first admissions in the oldest age group and a slower increase in the 45 to 64 group. Both the 24 to 44 and 24 and under groups show since peaks in 1953-1954 and 1952-1953, respectively, decreases in rate.

Resident population data from 1949-1950

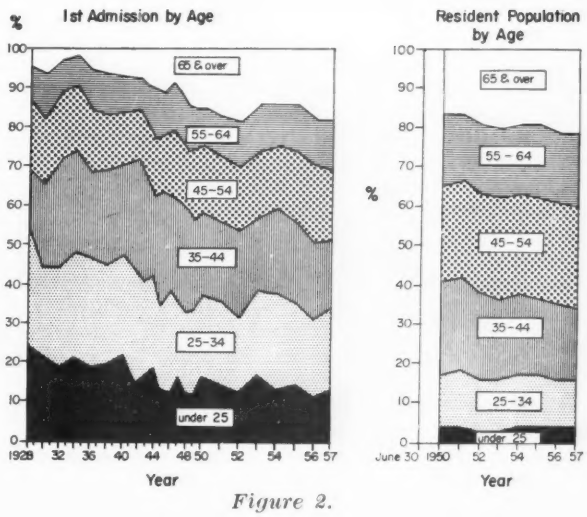

Figure 2.

to 1956-1957 if studied by similar age groupings shows an increase in the percentage of the 65 and over group (17% to 21%). Whereas the other groups with the exception of the 35 to 44 group which has dropped from 24 to 18% have shown no remarkable changes percentage-wise. The 65 and over group has increased, then, at the expense of the 35 to 44 group.

Increases are seen in number of older patients in both first admissions and resident population. In effect, the population of the hospital is aging and reflects the increasing age of first admissions. Improved geriatric care no doubt is contributing also to the aging of the patient population. In view of this trend it is apparent that future planning must include expanded facilities for older patients.

Not only is the population of the hospital aging but a corollary of this is seen in the increasing number of patients who have been in the hospital for 20 years and over. Spot checks for the years 1944-1955 and 1957 reveal that percentages of such patients in the resident population have increased from 15% to 18% to 21%, respectively, in these years.

Diagnostic Categories:

Admission diagnoses are made at the admission conferences attended by the entire staff. The diagnoses represent, therefore, the considered opinion of the staff rather than of the individual physician. Resident population diagnoses are based on the admission diagnoses, since not until the dis-

charge conference are any changes in diagnosis reported. Although the staff has changed in make-up over the years the current clinical director who is influential in the diagnostic process has been attending these conferences since 1933.

Our first line of inquiry was into what was happening to the manic-depressive and schizophrenic groups since the relationship between these two reactions has been questioned by many investigators. Some feeling that these are two distinct reactions; others placing both at different points on a continuum. Between 1932 and 1938 (Figure 3) there was a striking reversal of the ratio between first admission manic-repressives and schizophrenics. The manic-depressive percentages dropped from 27% in 1932 to less than 1% of first admissions in 1938. Whereas first admissions for schizophrenics increased from 22.5% in 1932 to 46% in 1938. If, since 1940, the annual variations are discounted it would appear that there is a slight downward trend in the percentage of first admission schizophrenics. Manic-depressive percentages have risen since their low in 1938, never approaching, however, the high of 28% of first admissions noted in 1930. If again annual variation is discounted there is a downward trend noted since a peak of 12½% of first admissions in 1952 for the manic-depressives.

During the years 1931-1943 some of the increase in the percentage of schizophrenics admitted for the first time is at the expense of manic-depressive first admissions. In fact in 1933 when the current clinical director and superintendent joined the staff they re-evaluated the criteria used in diagnosing manic-depressive disease and felt that many of the patients admitted formerly and diagnosed as manic-depressive or other psychosis were according to their criteria schizophrenic. If one combines these data from 1943 through 1957 it is apparent, too, that the combined percentage of schizophrenic and manic-depressive first admissions do not fluctuate as greatly as schizophrenic first admissions. The inference can be drawn here once again that there is an inverse relationship between the number of admitted patients diagnosed as schizophrenics and manic-depressives and that this relationship is based primarily on changing standards of diagnosis rather than a fluctuation in the actual number of such patients in each group.

We also studied readmission data for schizophrenics and manic-depressives since 1950-1951 and it is seen that the percentage of schizophrenics among readmissions has remained fairly steady in the last seven years, dipping to 42% in 1951-1952 with a peak of 51% in 1956. The manic-depressive group comprises 14% of readmissions in 1950-1951, dropping to 6% of readmissions in 1957. This latter trend, no doubt, is a reflection of the decrease in actual number of first admission manic-depressives. It is interesting to note that the percentage of schizophrenic readmissions has run consistently higher than the percentage of schizophrenic first admissions.

Other diagnostic categories studied (Figure 3) since 1950 included the personality disorders and psychoneuroses which show an increase percentage-wise among first admissions; the former particularly since 1954 (from 2.5 to 6.5%). In each case percentages in 1956 to 1957 were at their highest. However, in view of previous annual variation it would be unwise to state categorically that a definite trend obtains. Similarly, since 1955 the chronic brain syndrome-arteriosclerotic group has been increasing. But in 1957 it was only one percentage point greater than it had been in 1942-1943. A marked downward trend, as would be expected, is seen in the chronic brain syndrome-lues group, which peaked in 1944-

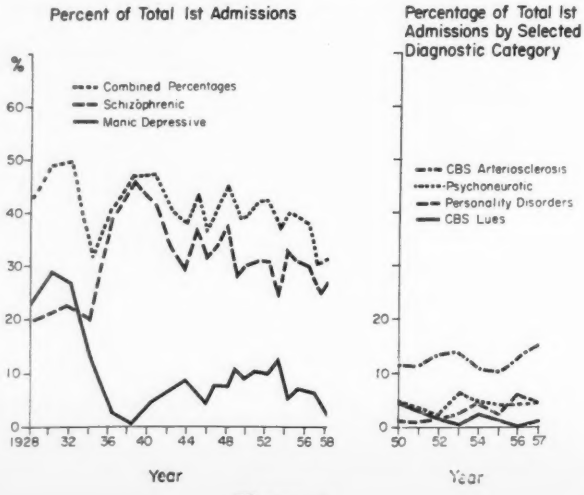

Figure 3.

1945 at 12½% of first admissions and dropped to less than 1% of first admissions in 1956-1957.

If the same data are plotted on a rate of change basis the acceleration for the psychoneurotic and personality disorder groups is striking, even though their actual number remains small. A slower acceleration is seen for the chronic brain syndrome-arteriosclerosis group, whereas, a marked deceleration is seen for the manic-depressive and chronic brain syndrome-lues groups.

A study of resident population data since 1949-1950 (Figures 4 and 5) reveals no marked trends for the schizophrenic or chronic brain syndrome - arteriosclerotic groups. The personality disorder and psychoneurotic groups are increasing percentage-wise, whereas the manic-depressive and chronic brain syndrome-lues groups, are declining slowly.

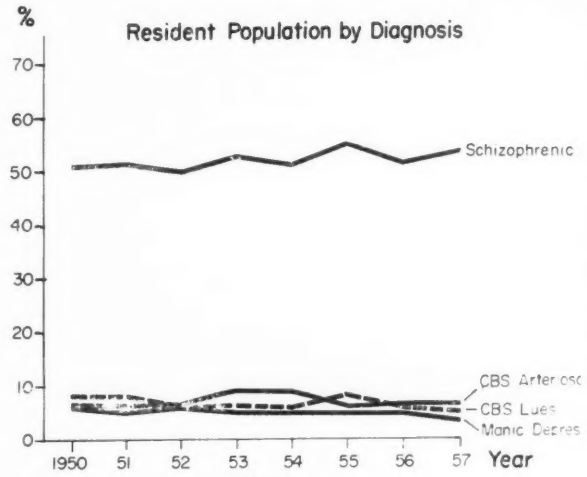

Figure 4.

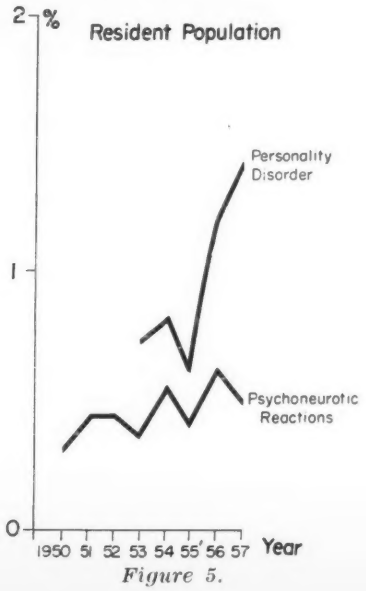

Figure 5.

It is apparent that the decline noted in first admission percentages of the schizophrenic, manic-depressive and chronic brain syndrome-lues groups, are being taken up by the personality disorder, psychoneurotic, and chronic brain syndrome-arteriosclerotic groups. This latter group's increase being consistent with the finding above that first admission patients are aging.

It is apparent also once again that resident population changes are slower in showing up than are those that appear among first admissions. And that no remarkable trends among diagnostic categories are discernible in the resident population as of this writing. Hints of trends appear but further data must be collected to establish their order and significance.

Race and Sex:

First admissions studied by race and sex revealed that the four groups, white male, white female, colored male, and colored female have been admitted in approximately the same ratios since 1941. Similarly in the resident population, the colored male and female ratios have not changed. Whereas the white men's group, larger than the white female group in 1941, was smaller than the white female group in 1957.

Conclusions and Summary

Total admissions to and the resident population of the hospital are increasing; the former at a greater rate than the latter. The increase in total admissions is accounted for by an increasing number of readmissions, whereas first admissions have leveled off at what may be at this time a maximum threshold. We must consider the possibility that reducing average hospital stay for first admission patient is one factor in increasing readmissions. Further, the intensive use of tranquilizers may result also in earlier parole of the patient, but may increase the probability of his readmission. The slower increase in resident population is a function of an increasing parole rate and in effect a reduction of average hospital stay per first admission patient.

As admissions increase so do discharges. This is strikingly seen by the failure of the resident population to reflect the marked variation in number seen in total admissions.

There is an increasing percentage of patients 65 and over in the first admission group, apparently at the expense of the patients 34 and under. The resident population reflects a similar trend for the 55 and over group at the expense of the 35 to 44 year old group. Trends in other age groups are not apparent. Further, the number of patients who have been residents 20 years and over is increasing, no doubt as a corollary of the aging of the resident population.

A relationship is seen between the number of first admission patients diagnosed as schizophrenic and manic-depressive primarily on the basis of changing diagnostic standards. There is a decrease in first admission percentages for both groups and for manic-depressive percentages in readmissions. Schizophrenics, percentage-wise among readmissions show no decline and run consistently higher than their percentage among first admission patients.

The decline in percentages of first admissions among the schizophrenic, manic-depressive and chronic brain syndrome-lues groups, appears to be taken up by the personality disorder, psychoneurotic and chronic brain syndrome - arteriosclerotic groups. These trends, however, are not at this time well established. Trends in resident population by diagnostic category are ill defined.

No remarkable trends were noted when our data was studied by race and sex groupings.

Somnambulistic Homicide

EDWARD PODOLSKY, M.D.

Somnambulism (sleep walking) is a form of sleep in which a person is able to function without any awareness of his motivations and actions. In somnambulism a greater or smaller part of the personality takes command and dictates the general behavior, the rest of the normal personality becoming apparently incapable of consciousness and having no influence on conduct.

Sleepwalking most often occurs during childhood and adolescence. When this sleep disturbance persists into adult life, the onset, in most cases, is found to have occurred about the time of puberty. At any time of life somnambulism is probably associated with dream after awakening. During somnambulism the individual commonly lives through a vivid experience, little or not at all related to his surroundings, and therefore hallucinatory in character. Although such persons appear to be walking in their sleep, they are not asleep in the normal sense of the word. Perceptions are often acute.

Since the metabolism of the cerebral cortex is still not wholly understood, it may be that a biochemical aberration is the causative agent in instances of sleep disorders. Somnambulistic activity is closely related to a form of behavior known as a fugue. In a true fugue the individual suddenly leaves his previous activity and does something which has no apparent relation to what he has just been doing and for which he has complete amnesia. In somnambulism there is an identical dissociated state except that it begins during sleep.

While it is necessary for a person to have consciousness before any cortical or brain function is possible, it is not necessary to have complete awareness. During somnambulism activity is so completely organized that it can function without awareness. There is a complete dissociation of behavior patterns from the patterns of awareness. The dissociation is in that part of the brain known as the diencephalon. Somnambulism, like dreaming, is a dissociative reaction, which H. P. Laughlin (The Neuroses in Clinical Practice, Philadelphia, *W. B. Saunders Co.*, 1956, p. 311) describes as "coordinated physical activity which has been split off or dissociated from the normal stream of consciously directed and purposeful physical activity." An individual who walks in his sleep

has probably not only the obvious capacity to dissociate motor activity but also a significant degree of suggestibility.

Automatic movements occur in a pathological sense without the subject's being aware of their meaning and even without his being aware of their happening at all. They do not have the full cooperation of the personality. These automatic movements do not involve interest and attention. They may, when generalized, occur in complete abeyance of the normal personality.

Homicide has been committed in quite a few instances when the individual was in a somnambulistic state. Some years ago in Mount Vernon, New York, a man shot and killed his wife. On trial he pleaded that he was sleep-walking, testifying that he had not been awakened until several hours later after the crime had been committed. This detail almost sent him to the electric chair, as the jury could not in all conscience believe that the explosion of his gun would fail to shock him back to consciousness. However, he was acquitted on the medical evidence that somnambulistics could sleep through any kind of activity, however noisy and explosive.

This fact was borne out dramatically in the case of John Cooke, a civil engineer of Denver, Colorado, who stabbed himself four times in his sleep and bled to death. Just before he died he awakened to relate to his wife a strange dream that he had. In the dream he had been surrounded by enemies trying to ruin him, and finally an evil spirit had persuaded him to kill himself. Not only did Cooke sleep through the violence of his act, but also through the intense pain.

Recently in Kentucky, a pretty 16 year old girl—Jo Ann Kiger—dreamed that burglars had broken into her home and were murdering her entire family. In what seems to have been a super nightmare she arose from her bed in the dead of night, seized two revolvers and plunged into the dream battle. Ten shots were fired through the darkened house and Jo Ann's father and six-year old brother lay dead, while her mother, shot through the hip, was crying in bewildered pain. The girl was charged with first degree murder, but at the trial the defense offered evidence that Jo Ann had suffered previous nightmares and was a confirmed somnambulist. This evidence, plus the prosecutor's inability to establish a shred of motive, resulted in the girl's acquittal.

English criminal history contains a case of somnambulistic homicide more horrifying in detail than the most sadistic crimes of the conscious murderer. Francis Stockwell, a quiet, retiring Englishman, fiendishly murdered and dismembered his wife while in a somnambulistic state. So shocked and horrified was he when he learned what he had done that he became psychotic and had to be confined to a mental hospital.

Some fourteen years ago in Mandan, North Dakota, August Schwartz, while in a somnambulistic state, shot and killed his wife and infant son. Schwartz had always been a quiet and well-behaved individual, steady going and not at all inclined to violence, and his act of homicide astounded everyone who knew him. No motive could be established for his act. He was sentenced to life imprisonment.

Another case was that of Chester Kutzlub who, while in the socnambulistic state, shot his wife. Three children of the Kutzlubs testified that their father walked in his sleep on an average of three times a week and that their parents never quarreled. There was no motive for this act. After the shooting, he became so grief stricken that he attempted suicide. He was acquitted.

One of the most famous cases of somnambulistic homicide is that of the noted French detective, Robert Ledru, aged 35, who was holidaying at the French seaport of Le Havre. He had just recovered from a nervous breakdown—the result of mental strain suffered in solving a case. One morning, while dressing after a refreshing twelve hours' sleep, he noted that his socks were unusually damp, and he was puzzled by this. Later in the morning his superior in Paris wired that the naked body of a man, presumably a midnight bather, had been found shot on the beach at Saint Addresse. As it was only a short distance from where the detective was vacationing, he agreed to help the baffled local police. The murdered man proved to be Andre Monet, a Parisian small business man, on a modest vacation. Monet was not wealthy; he had few friends and no enemies, and was in effect a harmless no-

body. His clothes were neatly piled on the sand near his body, and they had not been rifled. There were two clues: the murderer's footprints which the local police had pointed out, were practically worthless as they had been in stockinged feet. The ballistics record proved that the bullet had been fired from a Luger, a very common make. Even Ledru's gun was a Luger. Later, as Ledru examined one of the footprints with a magnifying glass, he turned pale. A toe was missing from the stockinged footprint. Ledru himself lacked a toe in the right foot. In a flash the explanation of his wet socks came upon him. On cold nights he was accustomed to sleeping in his socks. Before the astounded police Ledru made an impression of his toeless foot in the wet sand beside the murderer's prints. With the magnifying glass he compared the two. Obtaining the lethal bullet from the local police, Ledru hurried back to his hotel, fired a muffled shot from his own gun into the pillow, and examined the grooves on the two bullets. In haste he returned to Paris to report.

"I have the killer and the evidence, but I lack the motive. It was I who killed Andre Monet." The detective laid the bullets and photos of the two footprints on the desk. Ledru's horrified chief refused to believe, thinking that the detective had lost his mind. But after such conclusive evidence as he had presented it was quite clear that Ledru had murdered Monet while walking in his sleep.

Somnambulisms are similar to automatisms except that they appear to develop while the individual is and has been sleeping, and differ from fugues and cases of multiple personality in which a larger part of the personality is split off so that the patient is able to pass for a normal individual. This is rarely true in automatisms and somnambulisms. The somnambulism may become manifest simply because of a physiologic need, or it may be an expression of unconscious conflict. The sleepwalker's facial expression, the direction of walking may be indicative of the content of the dream or even the reason for the dissociative reaction. The psychologic purpose may be a sort of search for a specific object or for an abstract of generalized wish, an escape or a return.

The personality of the individual who, in adult life, walks in his sleep seems to be immature and inadequate. Those subjected to somnambulistic episodes customarily seem to have adjusted rather well to their life situations, are non-aggressive, socially well-behaved, and have limited ambition. Such individuals perhaps overcompensate a lack of self-confidence in scrupulous conformity and in avoidance of competition. Docility may serve to keep the sleepwalker from social or emotional pressures and may also afford gratification for dependency requirements.

Besides somnambulism as an indicator of concealed conflict there is also the factor of immediate stress. Individuals who have not been troubled by somnambulism since childhood are known to have recurrences during times of change or emotional disturbance. This manifestation may be considered part of the personality's reaction to crisis. In some instance the individual will recognize in his immediate situation the reason for the disruption of normal sleep. In others the particular threat to the ego will be unknown to the individual and the extent or seriousness of the problem such that he will resist any effort to stop his sleepwalking.

According to C. M. Pierce and H. H. Lipcon (Somnambulism, Electroencephalographic Studies and Related Findings. U. S. Armed Forces M. J., 7:1419, Oct. 1956), "The sleepwalkers have many unresolved oedipal problems and intense sibling conflicts. The development of an actual episode of sleepwalking is commonly related to emotional problems in which the man seems to have a need to run away from the bed (as a place of temptation) or to walk to a place of protection."

Conclusion

Somnambulistic homicide consists of automatic movements occurring in a state of sleep without the subject's being aware of their meaning or purpose. In this state the actions take place beyond the conscious will of the individual. They function without his awareness. For this reason somnambulistic homicide is never premeditated nor wilful.

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Diagnosis and Treatment of Endogenous Depressions with Mono-Amino-Oxidase Inhibitors

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Probably one of the most important advances in psychiatry has been finding the fairly specific antidepressive action exerted by certain hydrazines. The first drug in this series, Marsilid, while undoubtedly effective in a large number of cases also produced many undesirable side-effects and even toxic complications. Several other hydrazines were later shown to have an analogous specific antidepressive action. Of these phenelzine (B-phenylhydrazine) is employed in the present study and is demonstrated to have a high therapeutic index, low toxicity ratio, fast therapeutic gradient and excellent predictability.

The mode of action of the drug's antidepressant effect is still undetermined. I have seriously questioned[1,2,3] the role of serotonin in mood and give even less credence to the dendritic cerebral trophic action of these drugs. I have outlined these opinions in another publication.[4] This being a purely clinical paper, however, it is not intended to enter into theoretical disquisitions; whichever way these drugs work it is sufficient to know that they do work, their activity having been demonstrated.[4]

Because of the availability of such new, potent and specific antidepressant compounds, it is of the utmost importance to look closely at the problem of depression and render it as intelligible as possible. In two popular psychiatric dictionaries we find the following definitions of "depression": a) "a state of inaccessibility to stimulation . . . of lowered initiative, of gloomy thoughts," and b) "a lowering of vitality, dejection of the mind." While truthful, such definitions are so general that their overextended bones have as much meat on them for the clinician as, say, the term "bellyache." Common definitions of individual psychiatric syndromes labeled under "depression," of one type or another, present similar vagueness, or else the described symptomatology of a given syndrome resembles so closely that of other, and disparate, conditions as not to permit even the most rudimentary differential diagnosis.

For clinical operational use, the following definitions and classifications of the depressive syndromes are offered. These are based on the results obtained through the therapeutic action of the drugs and which therefore permit a sophisticated use of the products. In Table I is shown a classification of these conditions:

As demonstrated by Freud and his numerous co-workers and followers, depressions can be caused by the action of exogeneous factors on either the conscious or unconscious level. Such depressive reactions are termed "exogenous" to indicate that the noxious stimulus emanates from the environment. They are self-limited in duration, and episodes are usually short-lived; frequently repeated episodes may give an impression of unremitting continuity. They can be divided into two categories: "reactive" when the external trauma is received and operates at a conscious level and the sufferer responds in a conscious fashion; "neurotic" when the stimulus affects the unconscious of the individual which, in reacting, overrides the conscious processes. These exogenous reactions are characterized by worry, brooding, sadness and a greater or less psychofunctional disability, but they do not show disturbances of the mechanisms of thinking, poverty of ideation, psychomotor retardation or secondary psychotic manifestations. Current literature abounds in proof of the high resistance of these entities to ECT, drugs or even leucotomy, and their response to ordinary stimulants and psychotherapy. It is noteworthy that these exogenous depressions are not relieved by phenelzine or congenerical drugs. Cases of these syndromes that have responded are, in the author's estimation, merely spontaneous

From Marcy State Hospital, Marcy, N. Y.

Phenylzine (B-phenylhydrazine) is manufactured by Warner-Chilcott, Morris Plains, N. J., under the tradename Nardil.

TABLE I

DEPRESSIONS	EXOGENOUS	REACTIVE NEUROTIC	OVERT
	ENDOGENOUS	AFFECTIVE PSYCHOSIS DEPRESSED TYPE	LARVAL
		IDIOPATHIC	OVERT
			LARVAL
		ORGANIC	

improvements not ascribable to drug action.

Endogenous depressions on the other hand are characterized by their resistance to psychotherapy or environmental manipulation and their relatively facile yielding to somatic therapies. It may be stated that prior to the advent of such drugs as phenelzine, ECT and transorbital leucotomy were the treatments of choice for these depressions, whose symptomatology in general comprises many organic manifestations like psychomotor retardation and confusion, and secondary psychotic symptoms such as hallucinations.

The endogenous depressions generally show poverty and cyclicity of thought, psychomotor retardation, variable but noticeable loss of reality contact usually manifested by tangential thinking and impairment of comprehension, morbid thinking usually tinged with hopelessness and self-accusatory ideas. The mood shows marked and abundant grief and sadness and less commonly, fear. Confusion is usually present in a lesser or greater degree and agitation and hallucinations may appear in spite of the psychomotor retardation. While presenting all the preceeding symptomatology, the affective psychosis, depressed type (manic depressive psychosis, depressed type) differs from the idiopathic and organic type in that it usually begins in youth and follows a repetitious pattern of depressive episodes which become more severe with the years. Furthermore, the sufferers from this malady most frequently have a personality characterized by mood swings which oscillate successively from moodiness to mild overeuphoria. Idiopathic depressions tend to occur during middle-age or later in life and are not cyclic in pattern, tending to either remit or become chronic. This category includes the "psychotic depressive reaction" of the American Psychiatric Association,[5] and also such conditions as are commonly called "involutional psychosis, melancholia," a unique psychiatric diagnosis which is mainly (if not solely) upheld by the age of the individual, and the hazy theory that the sufferer is "incoluting." In most instances a concrete precipitating or etiologic factor cannot be demonstrated in the affective and idiopathic categories; in the organic depressions, however, organic disease directly or indirectly affecting brain function can be proven, or a physiological disturbance such as surgery, anesthetics, trauma etc. has occurred immediately prior to the onset of the illness.

Contrary to what happens in the exogenous depressions, the endogenous types show no tendency to remit spontaneously except in the affective types which follow a cyclic course. They become apparent under one of two common modes—overt (or classic) and larval. One mode we have termed "overt" because the sadness, poverty of ideas, psychomotor retardation, etc., are clear cut and well visualized. We have reserved the name "larval" depressions for the conditions demonstrated to have a depressive source and which respond in the same fashion as the overt endogenous depressions but do not show the classical symptomatology. This larval syndrome is quite typical and represents an incomplete developed but stabilized phase of the disease which may precede the overt phase. It is estimated that this larval form is by far the most frequent of all the endogenous depressions. Characteristically the patient complains of impaired appetite, insomnia, irritability, loss of attention and concentration, tendency to worry and marked irritability usually described as "nervousness." Such patients reach the psychiatrist only after lengthy treatments and "doctorings" for any number of somatic conditions, which treatments are usually built around some sedative or tranquilizer. It is noteworthy that larval depressions frequently become aggravated under the effects of these

drugs. With phenelzine this condition is easily managed, not only by the psychiatrist, but by the practicing clinician who usually is the first to see this type of patient.

Those described in Table I are, then, the true depressions. They should not be confused with syndromes characterized by lowering of physiological or behavioral functions such as schizophrenic autism, with its lack of affect, lesions of the cyngulate gyrus, with its neuromuscular inhibition, and similar conditions. The fact that a schizophrenic patient may suffer concurrently from a true depression, either exogenous or endogenous, at times makes a distinction of etiology most difficult if not impossible. The clinician, therefore, when in doubt, is well advised to prescribe phenelzine to any patient who shows sufficient symptomatic evidence of depression. Should full remission not occur in the expected time (4 days to 3 weeks), the reaction should be considered as schizophrenic and not as a depression.

Between 80 to 90 per cent of all endogenous depressions respond to phenelzine with marked improvement within three days to three weeks after start of treatment, and with full remission shortly thereafter.[6] The administration of the drug, however, has to be tailored to the requirements of the individual patient. The objective of the treatment is to produce as high cerebral levels of phenelzine as is possible in the minimum time. Since phenelzine, like most hydrazines, has a rather delayed accumulation time, and also the effect of the drug lasts for at least twelve hours, it is possible to administer the medication in two daily doses, contrary to our earlier practice of administering the medication q.i.d. We have found the administration of 30 mg. p.o. b.i.d. as a starting dose most satisfactory. If there is no improvement within one week, the dose should be raised to 45 mg. p.o. b.i.d. for another week, and, if there is still no response an additional and last increase to 60 mg. p.o. b.i.d. should be made. Lack of therapeutic results on this maximum dose for another week would indicate that the patient either was not suffering from an endogenous depression or that the depression was resistant to the drug. This dosage schedule is applicable to patients weighing between 125 and 175 lbs.; for those weighing more, an additional 15 mg. of phenelzine per dose should be prescribed, and for those weighing less, a corresponding decrease. If ECT is contemplated after a failure of response to the drug it is wise to keep the patient drug free for at least four days as the accumulation of cerebral catecholamines in the brain as a result of the phenelzine might, when combined with ECT, produce an undesirable or grave cardiovascular accident.

When the patient has shown such improvement as to warrant the assumption that a full remission is impending, the dose of phenelzine should be reduced to 30 mg. p.o. b.i.d., at which level he should be kept for another two weeks. The dose on which a patient should be maintained thereafter would average 15 mg. p.o. every day, but may be as high as 30 mg. b.i.d. or as low as 15 mg. every third day.

In general, age makes no difference in the method of administration and the dosage. Persons over 65, however, with heart disease, hypertension, arteriosclerosis or cardiorenal disease may not receive treatment dose beyond 45 mg. p.o. b.i.d., because these higher doses would produce marked aggravation of the symptoms (headache, vertigo, edema, palpitations) originated by their underlying physical complaint. In these patients, it is well to add a phenothiazine to prevent excessive accumulation of catecholamines in the brain. If the patient is not agitated, 25 mg. to 50 mg. of Pacatal, p.o. q.i.d. helps to prevent side effects, and if the patient shows agitation, Vesprin, 25 mg. to 50 mg. p.o. q.i.d. would probably work better. These phenothiazines do not counteract the antidepressant effect of phenelzine. In patients suffering from cerebral arteriosclerosis where depression has appeared following an embolism, or a shower of minute emboli, the treatment will be ineffective in most cases according to our preliminary findings. Treatment should nevertheless be attempted with special watch being made for side effects, which would be the signal to discontinue treatment. At this point it may be timely to point out that small doses of phenelzine, even if given over a long period, are not therapeutic. It is necessary to produce *rapid* and *adequate* concentrations of

the drug to produce desired therapeutic effect.

The answer to the question of how long a patient must be on maintenance doses of phenelzine depends on the natural history of the illness. In the affective psychosis we have found it necessary to continue maintenance dosage for only two to four weeks following full remission. As part of our treatment, these patients are instructed to watch for signs of an impending attack. In two patients who had a repeat episode following treatment two years before, the attacks were aborted by two or four weeks on phenelzine, 30 mg. p.o. b.i.d. Our 2½ year experience with this drug indicates that, in this type of psychosis, phenelzine need not be given between cycles, and that the cycles can be ironed out by periodic supplementary medication. In chronic depressions, we have seen relapses upon discontinuance of medication after three months on maintenance dosage. We have had no relapses when the maintenance dose was discontinued after six months. Obviously, no hard and fast rule can be given, but when in doubt, it is better to continue the maintenance dosage for a longer period than to withdraw it prematurely.

Phenelzine has little toxicity and requires only moderate care in its administration. Contraindications to its administration are degenerative heart disease, recent cerebral embolism or thrombosis, kidney disease with marked edema and atonic colitis, as the physiological action of the drug aggravates or complicates these illnesses. It also has few side effects which are predictable and in most cases are easily controlled by adjucant medication. The earliest side-effect to appear is postural hypotension characterized by dizziness and vertigo; this side-effect is apparent only in individuals who have hypotension or suffer from cerebral arteriosclerosis. In hypotensives the symptom is controlled by addition of 5 to 10 mg. of an amphetamine (Dexedrine, Methedrine) once to three times daily. In arteriosclerotics the addition of Pacatal or Vesprin is more effective but both the amphetamine and the phenothiazine may be combined in special cases.

Constipation is usually the next side effect in frequency. It is controlled by the addition of a fecal wetting agent combined with a mild laxative such as Doxinate with Darthron, or similar compounds. The third side-effect is usually ankle edema and this disappears with a non-hypotensive diuretic such as an oral mercuric salt, Diamox. Other side-effects, described elsewhere,[4] are negligible. Complications and toxic reactions are discussed below.

One question often asked is whether phenelzine and similar medications are indicated for hospital patients or for ambulatory patients. It is our opinion that the drug is suitable for both, and whether the patient has to be hospitalized or remains ambulatory depends on the severity of the illness, and the amount of cooperation that the patient and his relatives can provide. Occasionally an ambulatory patient presents such marked side-effects, particularly hypotension, that it is necessary to hospitalize him, in order to provide effiicient and rapid treatment.

The intensity or depth of depression and the risk of suicide, need not be a deterrent to the use of phenelzine. Some writers have stated preference for ECT in such instances. However, if the procedure of administration given above is followed, the response to phenelzine is as prompt as it would be to the electric therapy. Overtly suicidal risks should always be hospitalized.

Even in extremely out-of-contact patients and in depressive stupors and coma, it is possible to treat with these active drugs. The following cases illustrate this:

In the first instance, a man, committed because of a suicidal attempt, made additional suicidal moves while hospitalized and had to be kept under constant supervision. Permission for ECT having been refused, he was referred for treatment to the Advanced Drug Therapy Service of the Division of Research at Marcy State Hospital. Phenelzine 30 mgs. p.o. b.i.d. was administered for four days and, amelioration being minimal, and side-effects absent, the dose was increased to 30 mg. p.o. q.i.d. Partial remission occurred within three days and full remission within ten days, after which the patient was placed on a maintenance dose of 30 mg. b.i.d.

In the second case, an elderly woman was admitted to the hospital in depressive near-coma; she was stuporous, mute, extremely retarded in her movements, and unable to eat. She was fed by endogastric catheter and administered 45 mg. phenelzine i.m. b.i.d. Reversion of her endogenous depression began with eight days, and full remis-

sion was attained within an additional two weeks. Oral medication and voluntary feeding became possible three days after the start of i.m. therapy. In a similar quasi-comatous depression, another patient was given 2½ gr. of Sodium Nembutal half hour before lunch and supper, which allowed her to be fed. At each feeding the patient received 45 mg. phenelzine, making a total of 90 mg. a day. Unaided oral feedings started on the fifth day after the start of therapy.

Phenelzine, and to a large extent other similar acting compounds, bring the treatment of all endogenous depressions well within the therapeutic scope of not only the specialist but also of the practicing clinician. Depression is a widespread problem and treatment with hydrazine derivatives, such as phenelzine, is a great aid. Emphasis must be placed on the need to recognize syndromes of accidental or intentional overdosages since in this specific group there is increased suicidal risk.

Mild accidental overdoses are characterized by the appearance, over a period of not less than 24 hours, of drowsiness, followed by dizziness, irritability, fatigue, nausea and, at times, ankle edema. The most suitable course to pursue in such instances is to discontinue the drug until physiological homeostasis has been regained, usually a matter of three or four days, and then recommence therapy at approximately half the previous dosage. If irritability supervenes, then it is advisable to administer a phenothiazine, such as Pacatal, Thorazine or Vesprin, or other high-dosage compound. Low-dose preparations such as Compazine, Stelazine, and Trilafon are less effective. Bed rest may be necessary until the postural hypotension has disappeared.

In severe overdosages with true toxic results the initial manifestation is faintness, usually followed by severe precordial pain and intense headache; similarity to a coronary attack is marked, but the pain is not ancinating but burning and there is no sensation of impending death. A certain amount of hyperactivity usually precedes the episode which develops with marked agitation following the initial symptomatology. Later the skin becomes cool and clammy with profuse perspiration, particularly from the neck and head, and the pupils become small (but respond to light). In severe cases seizures, resembling status epilepticus, may occur. In other cases trismus and opistothonos may be observed. Pulse tends to become irregular and fast, and respirations shallow. In all cases observed, however, the patients remained in intellectual contact throughout.

The symptomatology is caused by the enormous increase in catecholamines, principally epinephrine and nor-epinephrine, in the brain and bloodstream as a result of monoamino-oxidase inhibition. It is essentially a hyperepinephrinemia occasionally observed after an injection of epinephrine, but more intense and of longer duration. The treatment of this condition requires intensive use of phenothiazines, especially Vesprin and Thorazine. This veritable catecholamine intoxication may resemble other conditions, such as coronary occlusion tetanus, meningitis or brain tumor, to name only a few. A rapid method for differential diagnosis (and also the start of treatment) is afforded by the intramuscular injection of 40 mg. of Vesprin. Within 15 to 20 minutes the patient has shed most of his symptoms and appears to be resting comfortably. When this occurs, a diagnosis of massive phenelzine (or any other hydrazine product) overdosage can be made. This differential diagnosis is important, for, if not treated in time, the intoxication may be fatal.

Treatment consists of intramuscular administration of 20 to 40 mg. Vesprin, a drug that combines a strong sedative effect with a marked antagonism to the catecholamines. The injections should be administered as often as needed and this may range from q.i.d. to every two or three hours. As treatment progresses the injections are spaced so that toxic symptoms are kept in abeyance and are replaced by oral therapy as soon as the patient can take food orally. Measures to prevent dehydration and preserve electrolyte balance and adequate parenteral or endogastric feedings should be taken concurrently. It is important to keep vigilant about the elimination of these patients; hyperepinephrinemia tends to inhibit intestinal peristaltism and to produce bladder atony. Catheterization may be required. Fecal softening agents are also valuable aids. Special reliance, however, must be placed on the use of prostigmine, oral or parenteral, to restore

smooth muscle tone. Absolute bed rest, to avoid undue cardiac strain, is needed until the major dangerous symptoms have disappeared, which will take approximately three to six days.

Stimulants, such as caffeine and analeptics (amphetamines) should be avoided, as they would aggravate the condition. Digitalization may, however, be performed if indicated.

If massive overdosage is detected within two or three hours of ingestion of the drug, gastric lavage is certainly indicated and strong drastic purgation should be administered, because the tablets of phenelzine do not dissolve immediately. Thus excessive absorption of the product into the blood stream may be prevented or minimized.

The author has had the opportunity to observe and treat three cases of massive overdosage, two intentional and one accidental. The first, a 31 year old female, in good health, took 375 mg. of phenelzine at bedtime and, on awakening, another 180 mg. She recovered with the above-described treatment within ten days. The second, a 70 year old woman, fearful of relapsing, ingested a daily dose of 270 mg. for three days. When toxic symptoms appeared she was hospitalized; recovery took place in one week. The last, a ten year old boy, mischievously took 300 mg. from a relative who was on this medication and unwarily left his bottle of pills within reach of incautious hands; recovery was also uneventful in four days.

Summary

Phenelzine is an effective drug for the treatment of endogenous depressions. To clarify the indications for this type of medicament, the hydrazine, a classification and definition of depressions is made. Methods, procedures and routes of administration are described, treatment discussed and side-effects and contraindications detailed. Special attention is devoted to the treatment of problem cases, such as CVA and heart conditions in depressed patients. Finally, the recognition and treatment of accidental and intentional overdosage is discussed.

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Empathic Communication and Anxiety in Medical Students

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A current phase of medical education concerns the attempt to provide a type of training that will sensitize the medical student to the "humanistic" element in the doctor-patient relationship. Concomitantly, increasing interest has been focused upon stimulating the student's emotional development so that he may adequately cope with those issues, other than diagnosis and treatment, which are important in maintaining a sound relationship with the patient.

This report is presented as part of a study[1,2,3] aimed at an evaluation of the impact of a comprehensive multidisciplinary clinical program on the affectively charged aspects of student growth. Three areas of student involvement are under study: the degree of empathic communication, of anxiety about illness, and of adequacy, as related to medical care.

Going on the assumption of a null hypothesis, it is predicated that professional empathic communication is a function of personality which is not particularly influenced by medical school curricula. Thus there should not be differences in this affectively charged area between first year and third year students nor should there be differences among third year students exposed to varying curricula.

The second hypothesis is based on the fact that anxiety as regards perception of illness is influenced by extent of medical knowledge, and also that the student's concept of his adequacy in the sickroom situation is a function of medical education.

In essence, this is an investigation into affective areas of student personality as they relate to the development of the physician's role. It also surveys the impact of one type of experimental curriculum.

Procedure

The population studied consisted of an entire freshman class, comprising 64 students, and a third year class of 50 students. All subjects were evaluated by projective techniques at the beginning and close of the school year, a lapse of eight months.

The freshman took the usual preclinical courses. This group was included as a baseline of comparison against the more advanced students. If attitudes are due to personality primarily then there should be no difference between test responses of the freshmen and juniors, regardless of the curriculum. The third year students were divided by stratified random sampling into a control and experimental group.

Each experimental student was assigned the role of family physician to one family for a nine month period. During this time, supervised by preceptors, he assumed responsibility for the medical care of the family. This included clinic and home visits and conferences with community agencies as well as the Family Care staff. The students also participated bi-weekly in small student-oriented seminars. There were ten students in each seminar group, which was also attended by the staff. The Family Care staff was comprised of the chairman of the Department of Community Health, who acted as group leader and coordinator of the project, an internist, a social worker, a public health nurse, a pediatrician, a psychiatrist, and a psychologist.

Method of Evaluation

At the outset it was found that no tests were available to elicit the specific concepts to be evaluated. In a preliminary survey opinionnaire-type tests proved ineffectual for this particular study because the students tended to anticipate the optimal response, regardless of their actual opinions.

Several projective tests are being evolved as a means of exploring relevant attitudes. It was felt this method made for minimal defensiveness on the part of the student. The findings reported here are derived from the Sickroom Situation Test. This is based upon a semi-structured thematic apperception projective technique.

One of the major concepts involved in thematic apperception is that perception and personality are related. Given a provocative and carefully ambiguous stimulus, the individual will modify his objective perceptual process and introduce an apperceptive or personally oriented quality. The nature of the apperceptive response will conform with the law of determinism.

The "Sickroom Situation Test" comprises a picture designed for this project, and a multiple choice response sheet. After instructions have been given, the picture is flashed on a screen and students are provided with a response sheet, from which they select items they consider most descriptive of what is happening in the picture.

Interpretation of responses is made on the basis of weighted scores. Responses are graded so that findings will be objective and quantitative analysis can then be carried out. There are four major response categories: empathic communication, anxiety, adequacy and the overall self concept regarding the sickroom situation.

Validity

The intangibility of the emotional factors being explored has necessitated validation through the use of clinical appraisal of subjects by several experienced judges. Six judges, members of the departments of psychiatry and pediatrics of the medical college, were used. They were asked to observe several groups of students assigned to work with all judges. The judges' opinions were recorded on a rating sheet which objectively defined and de-

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limited the areas covered by the test. The ratings and findings correlated significantly.

Results

At the outset, the family care, the regular curriculum and the freshmen were similar in all subtest areas but one. This exception was in the gravity or anxiety with which the illness situation was approached. Here the freshman group was significantly more anxious than the third-year group.

The freshman Gestalt score is no different before and after their first year experience. Their patient-oriented perceptions have not changed. The primary characteristic of this group is that these students are not involved in clinical work and do not come into contacts with patients. The functions measured on the test, therefore, do not change appreciably as a result of the first year in this medical school curriculum. Neither do the control students improve significantly on the basis of their hospital work. This is in contrast to the growth reflected in the gestalt score of those students who have had, in addition, the family care experience.

Discussion

The findings indicate that first and third-year students do indeed generally share similar concepts of empathic communication. However, there was a significant difference in the responses of the experimental group as compared to those of all other students at the conclusion of the year's experience.

The family care gain is significant mainly because there is an increase in empathic communication in this group and a decline in the control group. It is interesting that the negative change in the controls represents a downward trend in the conventional third-year class. This tendency coincides with Eron's findings[4] in which he noted that there is a significant increase in "cynicism" and a decrease in "Humanitarianism" among upper classmen when first and fourth year students are compared. The experiences gained in this type of family care program may thus stem a negative tendency developing in the third year, even increasing empathic communication slightly, whereas students in the conventional curriculum gravitate to a slightly less empathic position.

The second hypothesis is borne out in that there is a correlation between time spent in medical school and perception of illness. Increasing experience, as might be expected, seems to reduce the apprehension or grimness in view of the sickroom situation.

Adequacy, as evaluated by this method, is contingent upon the degree of independence of the student in solving medical problems. The less "adequate" student sees himself as seeking authoritative support. It is interesting that at the outset there was no difference between students just entering medical school and those who had already completed two preclinical years of basic science. However, after a year of rotation in the clinical departments, both of the third-year groups became more adequate than the freshman group.

The Gestalt or total pattern of affective areas started from the same baseline. After participation in the Family Care Program there was a positive shift in over-all development of the affective areas measured. This trend differentiated the family care students from those in the first year and in the conventional third-year curriculum as well.

Conclusions

Our sampling while not small, is limited to one medical school and to a specific curriculum exposure. Although results cannot be generalized for other schools it may be concluded that affective aspects of the doctor-patient relationship can be influenced by involvement in a carefully structured setting. In this instance the setting included a multidisciplinary staff approach, encouragement of comprehensive responsibility, longitudinal care of families, and seminars designed to allow exploration of student anxieties. It is noteworthy that though empathy was never mentioned by the staff, the most marked change in the experimental group occurred in the conative area of empathic communication. Anxiety and adequacy were not affected by participation in any particular curriculum.

Although more work remains to be done these preliminary findings would suggest that the medical school curriculum can provide emotional growth and maturity as well as technical competence.

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Discussion

ROBERT H. MCCARTER

This paper clearly presents a well designed project. The hypotheses are sound and not too extensive. The first of these hypotheses, however, that empathic communication is not influenced by curriculum seems to have been disproved. The second and third hypotheses that student's anxiety is influenced by the extent of their medical knowledge and that students' sense of adequacy is a function of the time spent in the sick room, are borne out by the evidence presented.

It seems particularly wise to have had the students selected at random for the Family Care Program. This may appear obvious but had the students chosen for themselves could we not expec

their bias to have had some bearing on their capacity to perceive or appreciate what is here termed empathic communication? Had all the students in the Family Care Program been there of their own choice I would expect them to have more potential for empathy than their counterparts outside the program. However, even this is an assumption and could itself be tested.

I would like to know how these test results were scored in detail. Such information would lend conviction to the impression that the findings are valid. More examples of what responses were scored as "high" and what was scored as "low" emphatic communication would be very interesting. I did *not* feel this need for more examples in relation to the other phenomena under test consideration, namely anxiety and adequacy. They are easier to conceptualize than this problem of empathy. The findings concerning anxiety and adequacy are not surprising. They have been noted by others and do not seem to me to have so much import for medical education as the matter of empathic communication. It is on this last that I would like to focus.

The authors say that empathy was never mentioned by the staff but one wonders if it was in any way catered to or emphasized by the seminar staff. It is a broad concept and includes the whole range of human emotions. Did the psychiatrist or phychologist in the seminars with the third year students "teach" them empathy? Did they convey to the students in some sense not only the importance of seeing how other people really feel but also that in this course there was a premium on seeing this? (There must, of course, be such a premium; it is only fitting that the competent clinician sense how the patient and his relatives feel.) But how did these third year students learn to excercise their capacities for such communication? We know they were selected at random so that they had no greater or less potential for empathetic communication than the controls. How was this capacity brought out in them? I think it is safe to say that the secret lies not only in the seminar but also in the *continued* contacts they had with patients. First came their contacts as physicians with patients and relatives. After this contact which had produced an appreciation of how others felt, this matrix of experience was worked into more definite shape in the seminars. However, was not the students' empathic communication "quotient" increased "geometrically" rather than "algebraically" by virtue of their contact with their teachers?

It would be interesting to explore this by making detailed clinical observations of the students at work with their patients and of the students and teachers in their conferences. I have no neatly designed psychological technique in mind for this but rather the laborious job of on the spot recordings. My own hypothesis is that some students will become more quickly attuned to empathic communication because of positive identification with an "empathic-sensitive" instructor or from a relatively exaggerated need to please an instructor or for both reasons, and probably for other reasons.

Now what about the phenomenon of transference? And what of "counter" transference? Did these make themselves felt in the prolonged contacts between student and patient? Was transference an aid in establishing communication or was it a hindrance? It has long been my conviction that doctors outside of the field of psychiatry could find their relationships with their patients made clearer and freer from a variety of interpersonal difficulties if they could have at least a solid working knowledge, an emotional awareness, of what transference really means. It is something impossible to define intellectually if one does not know it also from experience. And it is through empathic communication that transference becomes known. We need here to distinguish between transference neurosis and transference phenomena. It is to the latter that I refer. These are the chronic infantile raction patterns present to some degree in so many people. I believe the medical students growth and development would be benefited further if they could be made aware of this. I believe this paper has helped to point the way towards further improvement in our methods of medical education. In this particular sense it has made an important and valuable contribution.

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